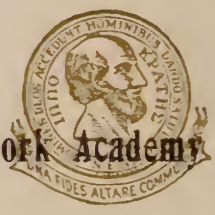
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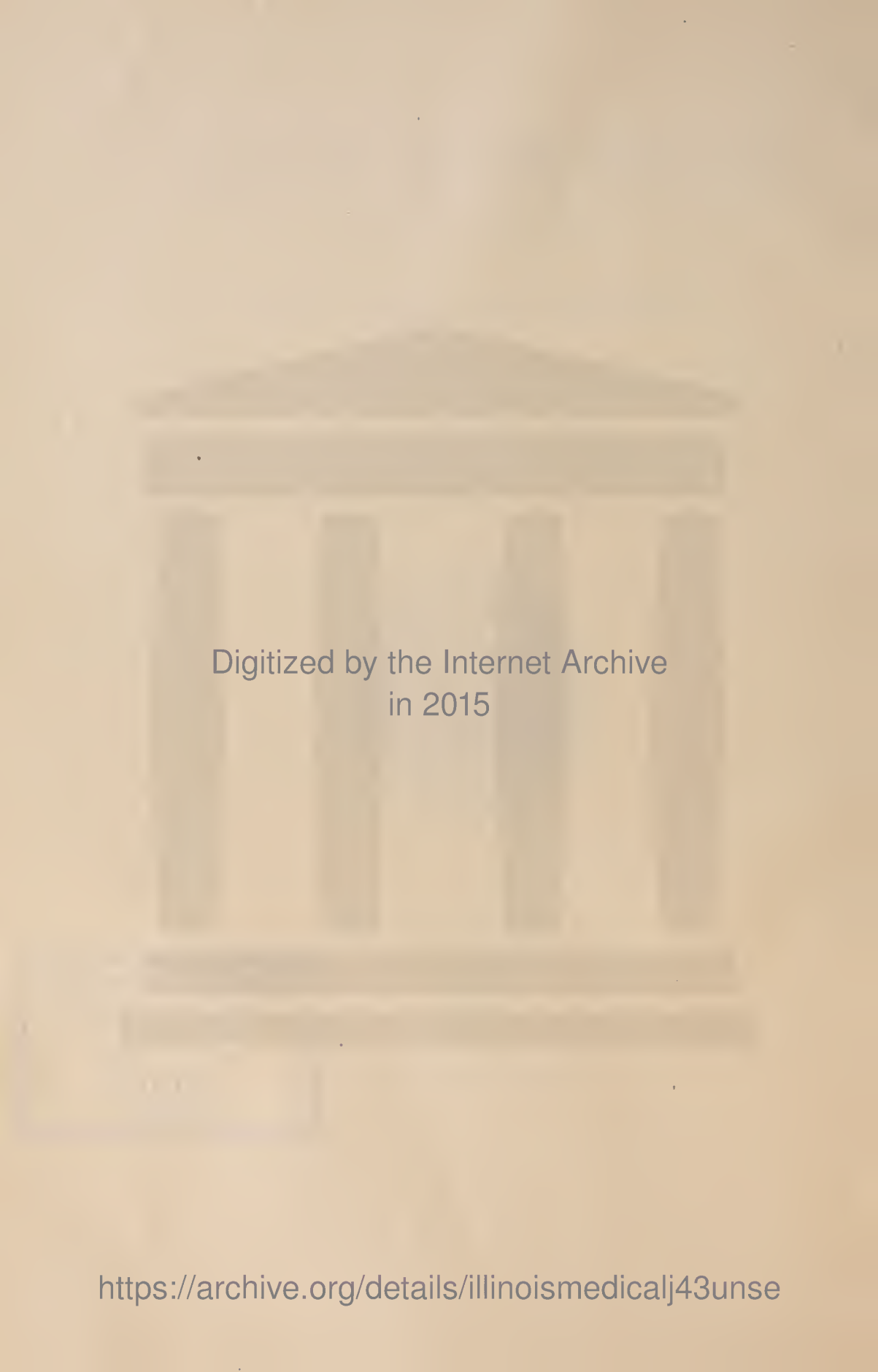
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INDEX TO VOLUME XLIII

January to June, 1923

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INDEX TO VOLUME XLIII

January to June, 1923

This is an alphabetical index of articles and discussions arranged by leading words. It contains occasional cross references. Names of authors and men who discussed the papers are also included. Details of society proceedings, including the names of papers read, officers elected, etc., can be located in the proceedings under Societies, Editorials, News of the State, Marriages, Deaths. The subjects of editorials also appear alphabetically and are marked (E).

A

Abbott, W. R. Discussion..... 317
Acidosis, Modern Conception of. Julius S. Weingart, Des Moines, Iowa 459
Address of Acceptance. E. H. Ochsner, Chicago..... 423
Allport, Frank. Paper..... 145
Alvis, B. Y. Paper..... 319
American Drug Manufacturers Meet. (E) 413
American Medical Association Convention (E) 190
A. M. A. session special trains. (E) 277
A. M. A. meeting at San Francisco. (E) 86
Anderson, C. H. Paper..... 159
Andrews, Albert H. Paper..... 164
Andrews, A. H. Discussion..... 64
Andrews, B. F. Paper..... 195
Andrews, Edmund. Paper..... 290
Andrews, Edmund. Discussion... 227
Anemia, Pernicious. R. D. Robinson, Chicago 129
Antivivisection, Freak Law Proposed. (E) 18
Apology. (E) 86
Appendicitis, Acute, in Children. Thos. H. Kelley, Chicago..... 454
Appendicitis, Perforative. O. L. Pelton, Jr., Elgin..... 308

B

Bainbridge, Wm. Seaman. Paper. 20
Bamberger, Arrie, Paper..... 453
Banquet of Doctors, Dentists and Druggists (E) 253
Beck, Jos. C. Discussion..... 237
Bernstein, M. A. Paper..... 70
Biesenthal, Max. Discussion..... 318
Birth controllists and Maternity Legislation (E) 344
Blue, Robt. Case Report..... 163
Book Reviews.....75, 105, 246, 324
Booth, J. W. Paper..... 235
Bram, Israel. Paper..... 311
Brawley, Frank E. Case report.. 162
Byford, Wm. H. Paper..... 452

C

Cancer Problem, Multiplex Pathology. Wm. Seaman Bainbridge, New York City..... 20
Cancer of Uterus, Diagnosis and Treatment. Arthur H. Curtis, Chicago 323
Cancer. Wm. M. Harsha, Chicago 109
Carbondale Anti-Malaria Campaign. Anselmo F. Dappert, Springfield 393
Cardiac Conditions, Early Diagnosis of Chronic. J. A. E. Eyster, Madison, Wis. 297
Cardiopath, Edematous. Jos. M. Patton, Chicago 117
Cary, Eugene. Paper..... 228
Cavanaugh, John A. Paper..... 59
Cesarean Section Under Local Anesthesia. Edmund C. Roos, Decatur 42
Child Menace and Divorce Problem (E) 17
Chiropractic, What Is (E)..... 18
Chiropractic Bested in Wisconsin Courts (E) 345
Choriocarcinoma Following Extrauterine Pregnancy. John Beverly Moore, Benton..... 114
Circulatory System, Anatomy, Physiology and Diseases of. H. C. Houser, Westfield..... 133
Civic Federation of Chicago Condemns Sheppard-Towner Act (E) 264
Civil Administrative Code Should Be Amended (E)..... 268
Cletcher, John O. Paper..... 465
Clinic, First Daily Hospital for Private Patients. Emmet Keating, Chicago 382
Cocaine, Abolition of. (E)..... 411
Compound Fractures, Treatment of. Wm. H. Byford, Chicago..... 452
Conjunctiva, Tumor of. Robt. Blue 163
Correspondence:
Actinomicosis. A. H. Sanford.. 19
Adjuster, A Crooked. F. Buckmaster 193
Conception, Regulation of; Committee Report 193
Infectious Jaundice. Geo. Blumer 19
Narcotic Records, Etc..... 106
Sheppard-Towner Act. Dr. H. W. Cheney 355
Culbertson, Carey. Discussion..36, 116
Curtis, Arthur H. Paper..... 323
Cystoscopy and General Practitioner. F. F. Hess, Chicago... 372

D

Dappert, Anselmo F. Paper..... 393
Death of Guinea Pigs or Human Beings (E) 18
Deaths:
Abrahams, Isaac, Chicago..... 408
Allen, Samuel William, Chicago. 332
Allen, Thomas Grant, Chicago.. 476
Bailey, Harry Vane, Pekin..... 408
Bair, Edward, Murphyshoro.... 331
Balcar, Joseph Oliver, West Franklin 332
Bartlett, Edward Pinchon, Springfield, Ill. 476
Barton, John Smith, Cuba..... 83
Barton, Louis E., Malta..... 408
Beattie, Andrew B., Anna..... 408
Beilstein, Frederick W., Chicago 168
Bennett, Richard Franklin, Litchfield 331
Bivins, Franklin Pierce, Shelbyville, Ill. 476
Boas, Edmund A., Chicago..... 168
Brady, Elizabeth Neil, Oak Park, Ill. 476
Bradley, Alfred Eugene, Highland Park 84
Brown, Oscar J., DeKalb..... 83
Burtt, Albert Sanders, Momence 331
Caldwell, Charles Burr, Lincoln 83
Case, Calvin Suverill, Kenilworth 408
Casey, Levi B., Marion..... 408
Clark, William Viney, Springfield 168
Collins, James S., Carlinville, Ill. 476
Converse, Albert L., Springfield 168
Corcoran, Katherine W., Chicago 168
Cox, Stephen W., Chicago..... 168

Craig, William M., Petersburg.. 252
Daum, Eugene Francis, Chicago 332
Dorris, Joseph L., Banklick.... 408
Duncan, William E., Chicago... 252
Dunn, Benton Vrengleman, Perry 168
Edgar, Thomas Oscar, Dixon... 332
Egan, John Joseph, Chicago.... 168
Eldred, Charles C., Joliet..... 252
Emons, Howard Charles, Chicago 476
English, Martin Lewis, Geneva. 83
Fitzbutler, Sarah Helen, Chicago 252
Fortier, George Snow, Chicago.. 332
Fortune, Hannabal D., Pleasant Hill 83
Francis, Charles Horace, Chicago 83
Gould, Cassius W., Chicago.... 332
Graham, Samuel Albert, Lincoln 331
Gruenewald, Julius, Glasgow.... 168
Haines, Walter Stanley, Chicago 167
Hall, William E., Chicago..... 83
Harrell, James C., Omaha..... 332
Harris, David Wesley, Carriers Mills 332
Harrison, Life, Peoria, Ill..... 476
Hartigan, Timothy, Chicago..... 476
Hayes, Edwin H., Chicago..... 252
Henline, James I., Bloomington. 83
Hoffman, John R., Wilmette.... 252
Holderread, John, Chicago..... 408
Hubbell, Harlan, Laura..... 83
Hughes, Enos John, Chicago.... 332
Huntsinger, Harrison Pettit, Pinckneyville 252
Hursen, Isabella, Chicago..... 252
Jacobson, Clarence Augustus, Chicago 331
Kitterman, Frederick Raymond, Tiskilwa 252
Kline, Minerva A., Chicago.... 332
Koch, Edward Philip, Chicago.. 252
Lambert, Curtis Allen, Chicago. 168
Lane, Myron Edwin, Chicago... 252
Lydick, Frank D., Paris..... 408
Lydston, George Frank, Chicago 332
Lyford, William Haines, Port Byron 408
MacKenzie, William Robert, Chester, Ill..... 476
Martin, William S., Tuscola.... 252
McCarty, Charles Elias, Peoria. 83
McCormick, George Allen, Hennepin 252
McDonald, James T., Mattoon.. 84
McMurtry, Tillman E., Chicago 408
Meskimen, John A., Allison.... 84
Michael, May, Chicago..... 332
Mitchell, John H., Mt. Vernon. 84
Montezuma, Carlos, Chicago... 252
Morrill, Charles M., Havana... 252
Oatman, Carl Layfield, Collinsville 408
Owens, John Edwin, Chicago... 84
Paine, Josephine H., Chicago... 84
Pasley, Birchner H., Decatur... 408
Pierson, Herman Wilfred, Wheaton 84
Poppele, Charles F., Decatur... 84
Porter, Frederick D., Chicago.. 252
Powell, Clinton Edward, Polo, Ill. 476
Quille, Maurice J., Jr., Chicago 476
Quine, William Edward, Chicago 84
Rice, John H., Quincy..... 252
Richardson, Ulysses Grant, Chicago 332
Richings, Henry, Rockford..... 168
Roach, James Joseph, Chicago.. 331
Robison, Leonard A., Canton, Ill. 476
Russell, A. Minnie, Speer..... 332
Schuhmann, Henry H., Highland Park 84
Schwachtgen George Banker, Aurora 252
Scott, James R., Edgewood..... 332
Selders, Eda Bergquest, Chicago 408
Sempill, Robert Arnot, Chicago 168
Shanahan, Thomas P., Chicago. 408
Skinner, William Oliver, Griggsville 252
Smith, Dormer Gheen, Freeport 332
Smith, Espy L., Chicago..... 332
Snoddy, Lot, Chicago..... 476
Spicker, Mark, Chicago..... 476
Stahl, John George A., Chicago.. 476
Stedman, William E., Sullivan.. 332
Stewart, John Hardin, Sr., Exeter 252
Swem, Jesse Augustine, Henry.. 331
Tyler, Franklin Pierce, Galesburg 332
Walker, Granville M., Chicago.. 408
Walker, William Philander, Mason City 168
Warloe, Thomas, Chicago..... 408
Watson, Thomas Matthews, Griggsville 408
Way, James P., Chicago..... 508
Webb, Christopher C., Warrensburg 84
Westermeier, George Washington, Cherry 332
Whitacre, Oscar W., West Frankfort 332
Whitley, Langley St. A., Godfrey 252
Wickersham, Lewis Llewellyn, Malden, Ill..... 476
Willis, George Harcourt, Winslow 332
Willson, Charles Glendenning, Chicago 332
Windett, Robert Alfred, Aurora 331
Wooley, Elijah, Saybrook..... 408
Young, Alben, Chicago..... 408
Young, Annie M., Chicago..... 476
Decatur Medical Society officers (E) 254
Decatur, the central city of the central state (E)..... 255
Decatur Meeting (E)..... 409
Defeat bill providing cooperation (E) 265
De Lee, Joseph B., Discussion.... 45
Diabetes Mellitus, Richard F. Herndon, Springfield 137
Diet during pregnancy. Eugene Cary, Chicago..... 228
Doctor and organized meddling (E) 266
Dodd, John M., Paper..... 203
Doing best we can (E)..... 94
Drake, W. D. Paper..... 468
Drugless therapists, Attitude of physicians toward (E)..... 16
Ductless glands re. dermatoses. M. L. Ravitch, Chicago..... 201
Duke, W. W. Paper..... 445
Dunn, James W., Paper..... 384

E

Ectopic gestation with cases. Thomas W. Nuzum, Janesville, Wis. 107
Ectopic pregnancy. Andy Hall, Mt. Vernon 33

Editorials:

American Drug Mfgs. Meet..... 413
American Medical Association convention 190
A. M. A. session special trains.. 277
A. M. A. meeting at San Francisco 86
Antivivisection, Freak law proposed 18
Apology 86
Banquet of doctors, dentists and druggists 253
Birth controllists and maternity legislation 344
Child menace and divorce problem 17
Chiropractic, What is?..... 18
Chiropractic bested in Wisconsin courts 345
Civic federation of Chicago condemns Sheppard-Towner Act.. 264
Civic administration code should be amended 268
Cocaine, Abolition of..... 411
Death for guinea pigs or human beings 18
Decatur Medical Society officers 254
Decatur Meeting..... 409
Decatur, the central city of the central state..... 255
Defeat bill providing cooperation 265
Doctor and organized meddling 266
Doing best we can..... 94
Drugless therapists, Attitude of physicians toward..... 16

Every one refusing examination to be quarantined..... 104
Faith bealing, Results of..... 169
Federal aid, Delusion of..... 263
Federal aid, Reject the bumiliating 264
Few toil alone for glory..... 280
Flat-foot, Modern treatment of.. 14
Happy New Year..... 1
Illinois Society of Industrial Medicine and Surgery..... 333
Illinois State Medical Society, Preliminary program 259
Illinois State Medical Society Program 336
Journals' change in style..... 1
Lay educational fund subscribers 345
Lay educational fund, Subscribers to 184
Lay educational fund, Subscribers to 271
Lay Education Fund, Subscribers to. 413
Lay press a menace..... 281
Lay publicity educational campaign 94
Lowden condemns federal aid.. 101
Maternity Act, How thinking men view 179
Maternity education directed by physicians 178
Medical education subsidy..... 100
Medical practice Act, Proposed new 87
Medical practice Act, Bill for 7
Medical profession indifferent in legal matters 17
Medicine as art versus science 280
Narcotic restrictions, Relief from 103
Nurses endowed, Why not doctors? 268
Officials Enslave U. S..... 410
Osteopaths Cannot Practice Medicine and Surgery..... 411
Pay physicians salaries equal to brick layers' 281
Physicians' offices as health centers 354
Physiotherapeutic week 189
Public health directed by statisticians 263
Quarantine prostitutes, Power to 104
Russian maternity system destroyed whole generation..... 6
Russian propaganda and U. S. maternity legislation 341
San Francisco Hotels..... 412
Sheppard-Towner Act, Why some states accept..... 87
Sheppard-Towner Cooperation, Senate Vote on..... 409
Sheppard-Towner Act, Bill for 7
Sheppard-Towner Act. Federal government will control 183
Sheppard-Towner Act, Comment on 172
Sheppard-Towner Act a move for birth control 267
Sheppard-Towner bill as amended 170
Sheppard-Towner Bill cooperation with 334
State medicine opposed by district health superintendents... 85
U. S. Assistant Attorney General re. drug problem..... 192
U. S. Public Health Service exam. 189
U. S. turns to doctors in drug fight 191
Volstead Act, Revolt of physicians from 13
Voting system in A. M. A. unfair 2
Whole family eligible under mothers' pension laws?..... 267
Wisconsin Health Department under Washington dictation.. 352
Edmondson, Edward E., Paper... 208
Egdahl, A., Paper..... 50
Electro-Coagulation Treatment of Carcinoma. Frank J. Novak, Jr. 78
Endocervicitis, Eradication of Chronic. John O. Cletcher, Cisco 465
Ethmoid labyrinth, Surgery of. Albert H. Andrews..... 164
Every one refusing examination to be quarantined (E)..... 104
Eye injuries, Industrial. Frank Allport, Chicago..... 145
Eye, Unusual Foreign Body in. W. D. Drake, Effingham..... 468
Eyster, J. A. E., Paper..... 297

F

Faith healing, Results of (E)..... 169
Faith, Thomas, Paper..... 163
Family doctor, Case of the, E. O. Laughlin, Paris..... 375
Farr, R. E., Discussion..... 45
Farr, Robt. Emmett, Paper..... 120
Fatigue intoxication, Treatment of chronic. Edw. H. Ochsner, Chicago 125
Federal aid, Delusion of (E)..... 263
Federal aid, Reject the humiliating (E) 264
Few toil alone for glory (E)..... 280
Fisher, J. A., Paper..... 199
Flat-foot, Modern treatment of (E) 14
Flynn, Helen B., Paper..... 376
Follicular eye affections in children. James W. Dunn, Cairo.. 384
Fractures, Treatment and results. John M. Dodd, Ashland, Wis... 203
French, R. L., Discussion..... 69
Fry, Frank R., Paper..... 151
Fuller, Wm., Discussion..... 112

G

Gall bladder, Non-surgical drainage of. Jacob Meyer, Chicago 47
Gellhorn, Geo., Paper..... 37
Gibbon, John W. Paper..... 424
Glaucoma surgery. Michael Goldenburg, Chicago 219
Goin, Lowell S., Paper..... 237
Goiter, Atypical exophthalmic. Israel Bram, Philadelphia..... 311
Goldenburg, Michael, Paper..... 219
Grove, W. E., Paper..... 248
Gunshot Injury Involving the Ulnar Nerve. Arrie Bamberger, Chicago 453

H

Hall, Andy, Paper..... 33
Happy New Year (E)..... 1
Harsha, Wm. M., Paper..... 109
Hayes, Robt. H., Paper..... 314
Heineck, Aime Paul, Paper..... 245
Heineck, Aime Paul. Paper..... 442
Hemorrhoids, Injection treatment of. Wm. A. Hinckle, Peoria... 217
Herb, Ferdinand, Paper..... 54
Herndon, Richard F., Paper..... 137
Hernia, New operation for femoral. Edmund Andrews, Chicago 290
Hernia, Splitting cord in indirect inguinal. C. B. Ripley, Galesburg 223
Hess, F. F., Paper..... 372
Hinckle, Wm. A., Paper..... 217
Houser, H. C., Paper..... 133
Hoyne, Archibald L. Paper..... 433
Hypersensitiveness (Specific) as Cause of Illness. W. W. Duke, Kansas City, Mo..... 445

I

Illinois Society of Industrial Medicine and Surgery (E)..... 333
Illinois State Medical Society, Preliminary program (E)..... 259
Illinois State Medical Society Program (E) 336
Indigestion, Chronic, in childhood. John Lovett Morse, Boston, Mass. 364
Insane, Treatment of. C. H. Anderson, Anna. 159
Intestinal Stasis. Edgar E. Poos, Belleville 402
Intraocular tension, Increased. Thos. Faith 163
Iscovesco, H. Paper 292

J

Johnson, C. M. Paper..... 400
Jones, Hugh O. Discussion..... 113
Journal's change in style (E).... 1

K

Kaeser, A. F. Paper..... 149
Keating, Emmet. Paper..... 382
Kelley, Thos. H. Paper..... 454
Kile, R. P. Paper..... 378
Kimmet, Wm. A. Paper..... 436

Knee-joint, Disturbances of. M. A. Bernstein, Chicago..... 70

L

Larynx, Benign Neoplasms of. Johu A. Cavanaugh, Chicago..... 59
Larynx, Neoplasms of. Charles M. Robertson, Chicago 210
Laughlin, E. O. Paper..... 375
Lay Educational Fund Subscribers (E).....184, 271, 345
Lay Press a Menace (E)..... 281
Lay Education Fund, Subscribers to. (E)..... 413
Lay Publicity Educational Campaign (E) 94
Lipoids. H. Iscovesco, Paris, France 292
Lowden Condemns Federal Aid (E) 101
Lungs, Gross Lesions, Diagnosis of. Robt. H. Hayes, Chicago... 314

M

Major Infections. Wm. J. Mayo, Rochester, Minn. 283
Malignancy Infection versus Heredity. Helen B. Flynn, Chicago 376

Marriages:

Bailey, Fuller Bryan, Chicago.. 165
Belau, Laetitia, Chicago..... 329
Bogue, Arthur Reuben, Rochelle 80
Broman, Martin Robert, Chicago 165
Cohen, Carl, Atlanta..... 329
Dawson, William Artis, Chicago 329
Dodson, John Milton, Chicago.. 165
Engh, Helmer, Gillespie..... 165
Faltermayer, Jacoh, Chicago.... 80
Hayes, John Maurice, Decatur. 165
Hayes, John Maurice, Decatur. 329
Hedges, Leland Gilleland, Chicago 329
Hibbe, Henry Bernard, Oak Park 80
Karatz, Maurice B., Chicago.... 80
Kassmeyer, John C., East Duhuque 166
Kercher, John, Chicago..... 329
Kern, Maximilian, Chicago..... 406
Marcus, Morris C., Chicago.... 329
Mitchell, James Herbert, Chicago 166
Simon, Oliver Bernard, Batavia 406
Maternity Act, How Thinking Men View (E) 179
Maternity Education Directed by Physicians (E) 178
Maxillary Sinus, Mishaps in Puncture and Irrigation of. W. E. Grove, Milwaukee 248
Mayo, William J. Paper..... 283
McGinnis, Edwin. Discussion... 63
McKenna, Hugh. Discussion..... 124
McNealy, R. W. Discussion..... 226
Medical Education Subsidy (E).. 100
Medical Organization. S. F. Kaeser, Highland 149
Medical Practice Act, Proposed New (E) 87
Medical Practice Act, Bill for (E) 7
Medical Profession Indifferent in Legal Matters (E)..... 17
Medicine as Art versus Science (E) 280
Mesenteric Thromhosis. C. M. Johnson, Harvard 400
Meyer, Jacoh. Paper..... 47
Moore, John Beverly. Paper.... 114
Moore, J. J. Discussion..... 116
Morse, John Lovett. Paper..... 364
Morwitz, S. M. Paper..... 463

N

Narcotic Restrictions, Relief from (E) 103
Nasal Septum, Symptoms and Treatment of Deviations. E. E. Edmondson, Mt. Vernon..... 208
Nasal Septum, Acute Ahscess of. S. M. Morwitz, Chicago..... 463
Nephrolithiasis Complicating Pregnancy. Aime Paul Heineck, Chicago 442
Neurasthenic Conditions, Etiology and Management of. Frank R. Fry, St. Louis, Mo..... 151
News Notes.....81, 166, 250, 330, 406
Nitrous Oxid and Oxygen in Ohstetrics. A. E. Rives, East St. Louis 230
Nose, Re Eye and Ear. B. F. Andrews, Chicago 195
Novak, Frank J., Jr. Paper..... 78
Nurses Endowed, Why Not Doctors? (E) 268
Nuzum, Thos. W. Paper..... 107

O

Ohstetrical Emergencies, How to Meet. Geo. Gellhorn, St. Louis, Mo. 37
Ochsner, Edw. H. Paper..... 125
Ochsner, E. H. Address..... 423
Oculist and Practitioner. B. Y. Alvis, St. Louis..... 319
Officials Enslave United States. (E) 410
Osteopaths Cannot Practice Medicine and Surgery. (E)..... 411
Otitis Media, Treatment with Tuherculin. G. Thomsen von Colditz 328
Ozena, Fetid and Nonfetid. J. A. Rundstrom 249

P

Paget's Disease Involving Ears, Nose and Mouth. G. W. Booth, Chicago 235
Paralytic Upper Extremity, Surgican Reconstruction of. Arthur Steindler, Iowa City, Iowa..... 197
Parmenter, Geo. H. Paper..... 156
Patton, Jos. M., Paper..... 117
Pay Physicians Salaries Equal to Bricklayers' (E) 281
Pelton, O. L., Jr. Paper..... 308
Personals.....80, 166, 250, 329, 406
Physicians' Offices as Health Centers (E) 354
Physiotherapeutic Week (E)..... 189
Pierce, Norval H. Paper..... 76
Placenta Previa and Cesarean Section. J. A. Fisher, Metropolis. 199
Pollock, Harry L. Discussion.... 63
Poos, Edgar E. Paper..... 402
President's Address. E. P. Sloan, Bloomington 421
Preventive Surgery, Re Focal Infection. Geo. H. Parmenter, Beecher City 156
Prohihition Re Narcotics. L. D. Volk, Brooklyn..... 423
Public Health Directed by Statisticians (E) 263

Q

Quarantine Prostitutes, Power to (E) 104

R

Rainey, Warren R. Paper..... 370
Ravitch, M. L. Paper..... 201
Rectum, Syphilitic Stricture of. Warren R. Rainey, St. Louis... 370
Reeder, W. G. Paper..... 241
Retinitis Pigmentosa. Frank A. Brawley 162
Rhinitis, Intranasal Injection of Alcohol in. Otto J. Stein..... 326
Rhinitis of Known Etiology. Don C. Sutton 326
Ripley, C. B. Paper..... 223
Ripley, C. B. Discussion..... 291
Rives, A. E. Paper..... 230
Rohertson, Charles M. Paper... 210
Robinson, R. D. Paper..... 129
Roos, E. C. Discussion..... 124
Roos, Edmund C. Paper..... 42
Ruudstrom, J. A. Paper..... 249
Russian Maternity System Destroyed Whole Generation (E). 6
Russian Propaganda and U. S. Maternity Legislation (E)..... 341

S

San Francisco Hotels (E)..... 412
Sheppard-Towner Cooperation, Senate Vote on. (E)..... 409
Sheppard-Towner Act, Why Some States Accept (E)..... 87
Sheppard-Towner Act, Bill for (E) 7
Sheppard-Towner Act, Federal Government Will Control (E).. 183
Sheppard-Towner Act, Comment on (E) 172
Sheppard-Towner Act a Move for Birth Control (E)..... 267

Sheppard-Towner Bill as Amended (E) 170
Sheppard-Towner Bill, Cooperation with (E) 334
Shipley, Manly. Discussion..... 54
Skin, Notes on Care of. Arthur William Stillians, Chicago..... 388
Sloan, E. D. Discussion..... 45
Sloan, E. P. Address..... 421
Smallpox, Differential Diagnosis of. A. L. Hoyne, Chicago..... 433
Society Proceedings:
Carroll County. May 9, 1923... 468

Cook County:

Chicago Medical Socicty, Dec. 6, 13 76
Jan. 10, 24, 31, 1923..... 161
Feb. 7, 14, 21, 28..... 247
March 7, 14, 21, 28..... 325
April 4, 11, 18, 25..... 404
Chicago Medical Society. May 2, 9, 23..... 468
Chicago Laryngological and Otological Society, Feb. 6, 1922 76
March 6, 1922.....164, 248, 325
April 3, 1923.....325, 404
Chicago Laryngological and Otological Society. April 3, 1922 469
Chicago Ophthalmological Society, Feb. 20, 1922..... 162
Chicago Ophthalmological Society. March 20, 1922..... 471
DeKalb County
April 26 406

Greene County

Dec. 8, 1922..... 79
March 9, 1923..... 329

Lee County
Jan. 9, 1923..... 165
Macoupin County: March 27, 1923 473
Madison County: May, 1923... 474
Sphenoid Sinus Disease, Complications of. C. F. Yerger, Chicago 304
State Medical Journal, How Best Serve. Chas. J. Whalen, Chicago 24
State Medicine Opposed by District Health Superintendents (E) 85
Stein, Otto J. Paper..... 326
Steindler, Arthur. Paper..... 197
Stillians, Arthur. Paper..... 197
Straus, David C. Discussion..... 123
Strauss, A. A. Discussion..... 291
Surgery of Upper Abdomen Under Local Anesthesia. Robt. Emmett Farr, Minneapolis 120
Surgical Judgment. John H. Gibbon, Philadelphia..... 424
Sutton, Don C. Paper..... 326
Swanberg, Harold. Paper..... 205
Syphilis of Lungs, Cases. A. Egdahl, Rockford 50
Syphilis and Complement, Re Arsphenamine and Mercury. Ferdinand Herb, Chicago..... 54

T

Tapeworm from Fecal Fistula Following Appendicitis. A. P. Heineck, Chicago 245
Temporal Bone, Re Pneumatization. Norval H. Pierce..... 76
Thyrotoxicosis, X-Ray Treatment of. I. S. Trostler, Chicago..... 64
Trostler, I. S. Paper..... 64
Tuberculin in Keratitis. W. G. Reeder, Chicago 241
Tuberculosis in Bones and Joints. Wm. A. Kimmet, Oak Forest.... 436
Tuite, John E. Discussion..... 69

U

Urologic Problems and Diagnosis. R. P. Kile, Rockford..... 378
U. S. Assistant Attorney General Re drug Problem (E)..... 192
U. S. Public Health Service Exam. (E) 189
U. S. Turns to Doctors in Drug Fight (E) 191

V

Volstead Act, Revolt of Physicians From (E) 13
Volk, L. D. Paper..... 428
Von Colditz, G. Thomsen. Paper. 328
Von Colditz, Dr. G. Thomsen. Discussion 244
Voting System in A. M. A. Unfair (E) 2

W

Weingart, Julius S. Paper..... 459
Whalen, Chas. J. Paper..... 24
Whole Family Eligible Under Mothers' Pension Laws (E).... 267
Williams, A. W. Discussion..... 319
Wisconsin Health Department Under Washington Dictation (E).. 352

X

X-Ray and Radium Rays in Malignancy. Harold Swanberg, Quincy 205
X-Ray Therapy, Basic Principles of Deep. Lowell S. Goin, Peoria 237

Y

Yerger, C. F. Paper..... 304

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Editorial

THE JOURNAL'S CHANGE IN STYLE

The rearrangement in the style of the JOURNAL, placing the editorials in front of the original articles, was ordered by the Council of the State Society and the editor hopes that it will meet with the approval of our readers. Several publications, both medical and lay, have adopted the same arrangement and no doubt many members of the State Society are familiar with it.

Unfortunately it almost necessarily means some delay in publication as we have heretofore been able to have the original articles all in "page form" on the first of the month, holding the editorial section open for late copy. For the present the table of contents will carry as many original titles as possible on the front page with the editorial details in the extended contents.

A HAPPY NEW YEAR

To force victory from menacing defeat is the task brought by the New Year to those members of the medical profession who have enlisted openly in the fight to save the mother science from extirpation by traitors within and charlatans without.

The hour of crisis is here. What is accomplished during the coming twelve months for the salvation of the practice of medicine will indicate the probable achievements for the next few centuries in behalf of the health of nations and the preservation of civilization.

There is much to be done at once to erase the ills borne in upon the nation and its most vital servitors—the physicians at large—by the malodorous and mistaken legislation accredited to the now departed year of 1922. In the Sheppard-Tower Maternity Bill alone, the evil 1922 has done will live long after the legislators and fanatics therefor responsible have mingled with the dust and blown into far crevices. The advance

made during the year 1922 by freak schemes of medico-politicals and misguided humanitarians and doctors whose business eye is far better than their scientific optic is as deplorable as seven cases of confluent smallpox in an absolutely unvaccinated day nursery with two physicians in charge. The situations are analagous. Gross carelessness and neglect paved the way for trouble in each instance. The two physicians in the hypothetical creche disaster would have to be up and stirring with a vengeance. And so, in blunt colloquial English, every doctor in the United States who owns any loyalty to the mother profession must "hump himself" to stop the epidemic of cult chicanery, lay dictation and paternalistic legislation and ignorant, jugglery threatening to overlord medicine into the ultimate degree of helplessness and inefficiency.

The lone ray of hope trailing in with the New Year, is that at last, the doctors of the United States from Florida to Alaska, are beginning to face the situation with opened eyes. And once the profession, man after man, realizes the true nature of the danger, there is a chance for dispelling the evil. Too long have the rank and file sat shackled and blinded, trusting in leaders who failed to lead, or who have been found to guide their flocks astray. In post-war chaos the plunderbund had a fine time for itself. The war's lees show signs now of settling. The hangover is abating. Men are beginning to reason where for a time they ran amuck. For the renegades the day of reckoning approaches in the protest of those who were deceived and betrayed.

It is meet to greet the New Year kindly, graciously, and with a fraternal spirit, but the even tenor of brotherly love receives a sadly discordant jolt from a retrospect of the medico-politico-achievements of 1922. No "Happy New Year" can be possible to the doctors of this country, and through them, to the medical men of the entire world—until the profession is guaranteed deliverance from the paternalistic enslavement and lay and political bondage slowly but surely enveloping medicine and all its works with the blackness of a cyclone harried night.

To secure a "Happy New Year" the doctors must get out and fight for their very lives and their life work. Patrick Henry's famous speech is recommended as inspirational reading. It is indeed "Natural for man to indulge in the illusions of hope." At present, what with the welfarists and the public health centers and clinics for about everything and everybody under the sun, irrespective of physical or financial status, the "illusions of hope" are the limit of the average physician's indulgence. This can all be changed, and the year 1923 stand emblazoned as twelve months of triumph, if doctors, in every hamlet and upon every boulevard, will stand shoulder to shoulder, pledged to put the science of medicine *first,* with its correlative necessity of doing what is best for the health of the people rather than for the wealth of their own pockets. Organization, co-operation and loyalty will bring the physician back to his proper place in public opinion. These three great movements can be made to wield such power that the presumptious old molly-coddles, egotistic semi-savants and job-begetting politicians who are now maneuvering to manipulate the health of the nation and the scientific skill of the nation's doctors as assets for their own bank accounts and petty vanities can be chased into the hinterlands of the nothingness from which they came.

And when this has been done—for the sick and the ailing and the generations yet unborn as well as for their faithful ministrants, the obscure but ever laboring doctors, then and only then, will the bells of time ring out the chime of a genuinely "Happy New Year."

THE UNFAIR MULTIPLE VOTING SYSTEM IN THE A. M. A. HOUSE OF DELEGATES

The American Medical Association Directory lists twenty-four specialties, or subdivisions, of the practice of medicine. In the A. M.A. House of Delegates, fifteen out of these twenty-four specialties are represented with multiple voting privilege. The membership of each of these fifteen specialties have delegates from their designated sections and are represented also in their respective state societies. This means that the Section delegates, each and everyone, out of this group of fifteen holds *two* votes per delegate as against only one vote for each of the representatives from each State society *per se.*

The fifteen sections with the multiple voting privilege are those listed as Practice of Medicine; Obstetrics, Gynecology and Abdominal Surgery; Opthalmology; Diseases of Children; Pharmacology and Therapeutics; Pathology and

Physiology; Stomatology; Nervous and Mental Diseases; Dermatology; Preventive Medicine and Public Health; Urology; Orthopedic Surgery; Gastro-Enterology and Proctology; United States Army; United States Navy and United States Public Health Service.

The complete roster of the twenty-four specialties or subdivisions as listed in the A. M. A. Directory is:

Surgery; Obstetrics; Gynecology; Obstetrics and Gynecology; Proctology; Gastro-Enterology and Proctology; Opthalmology; Laryngology; Rhinology; Otology, Laryngology, Rhinology; Opthalmology, Otology, Laryngogoly, Rhinology; Urology; Dermatology; Pediatrics; Neurology; Psychiatry; Neurology, Psychiatry; Internal Medicine; Tuberculosis; Anesthesia; Clinical Pathology; Roentgenology; Pathology; Bacteriology; Public Health, Hygiene and State Medicine; Radium; Stomatology; Pharmacology and Therapeutics; Pathology and Physiology; Orthopedic Surgery; Government Service.

The "Lord giveth and the Lord taketh away." The A. M. A. lists the twenty-four specialties but to only fifteen of these is granted the right to wear the purple of the privilege of multiple voting power. Nor is this all.

There is unequal representation from the United States Navy and from the United States Public Health Service as still another unfair feature of the composition of the House of Delegates. These representatives are appointed by the Surgeon General of the respective departments as provided in Section 2, Article 5 of the Constitution and By-laws. This system leaves the Army and the Navy medical men, actually without democratic representation as their three delegates are not theirs by choice of the men themselves, but are appointed out of hand, by one man, the ranking officer of the respective department. Representative delegates from the Army and Navy Medical men might be secured if a way could be found to get the will of the rank and file of the medical corps without the surrender of their free choice to a Departmental Commander. And to such representation from the rank and file, less objection would be made. It is to be desired, also, for justice's sake that men in the United States Public Health Service should be members of the County Medical Societies of their home towns, and should join with their fellows in selecting delegates to the State Societies, that in turn choose representative delegates to the A. M. A. As matters stand now, the delegates from the United States Navy, from the United States Army and from the United States Public Health Service to the House of Delegates need not even belong to the A. M. A., and under any circumstances they are exempt from the payment of fellowship dues (Section 2, Chapter XI. of the Constitution and By-laws). This bonus of *representation without taxation* is simultaneously a privilege to them, and an insult to the poor and struggling physicians of the country who are taxed unjustly to support the gentlemen in government service so that these gentlemen in government service, living on the fat of the land, are unperturbed by the daily fight for existence.

Now at the meeting in St. Louis, Mo., in 1922, the number of delegates qualified totalled one hundred and thirty-seven. Of this number the A. M. A. directory lists as specialists one hundred and seventeen delegates. At the outset that would leave only twenty unclassified men, but even these were not free from "specialist infection," for several of the delegates whose practices are limited to specialties were not so designated. Out of these twenty delegates referred to last previously, one from New York restricts himself to psychiatry, and, though he was for years chairman of the New York lunacy commission is not listed by the A. M. A. as a specialist. A second example is that of another delegate whose practice is strictly obstetrics, yet who was not listed as a "specialist." We happen to know personally three more delegates who are of the same ilk, so that all in all, five of the delegates who are not listed as specialists in the A. M. A. directory really belong in that classification. This makes the total of specialists among the members of the House of Delegates at the June, 1922, meeting, amount to at least *one hundred and twenty-two* out of a total of one hundred and thirty-seven delegates! Of course this is merely bald, face value. Among the remaining fifteen delegates there may be still others who are "specialists" in every sense of the word. Fine outlook, isn't it, for the protection of the interests of the general practitioner?

Proceeding further still into the mysterious subtleties of the personnel of the multiple voting privileges of favorite sons of the House of Delegates of the A. M. A., it is discovered that of the

membership of the House of Delegates, forty-nine delegates are listed as surgeons in the A. M. A. directory. These forty-nine surgeons fail to include among them the special representation and the delegate accredited to the section on General and Abdominal surgery; and the delegate accredited to the section on Obstetrics, Gynecology, and Abdonimal Surgery. Hence of the membership of the House of Delegates of the A. M. A. among these one hundred and twenty-two specialists there were fifty-one surgeons!

Eleven delegates practice opthalmology. This is the section, by the way, that clamors so loudly for extra representation,—a sad case of applied bifocalism, as it were. Nor is this mighty eleven alone in its ideas as to minority privileges. Some sections that were allowed a special delegate had enrolled only ninety-one at the meeting! And so on, *ad nauseum,* through the sections. Nor does this seem to be sufficient. Although kings are declared notoriously out of fashion, what a caste machine is being erected in the House of Delegates of the A. M. A.! Not only was a resolution introduced into the House of Delegates at St. Louis to give twenty-five past presidents of the organization a seat in the house with the power to vote, but as we said at the outset, although the A. M. A. directory lists twenty-four specialists in the practice of medicine, out of this two dozen, *only fifteen are allowed a section delegate!* Is it amiss to ask for an explanation of this discrimination? To be sure, specialties in medicine are multiplying daily. Limitless, indeed, is the number that may secure future recognition. This is a great indefinitude. But there is not a whit of equivoke in the contention that it is as fair for one specialty as it is for another, to have delegates in the House of Representatives.

Representation from states to the House of Delegates of the A. M. A. is based upon the ratio of one delegate to each seven hundred and fifty physicians and surgeons in the state membership. As has been shown here previously this ratio seems to have been delivered into the hands of the specialists, and specialists make up practically the entire personnel of the A. M. A. House of Delegates. While we feel that the situation is undesirable, complaint can not be registered so long as the state organizations see fit to send specialists as A. M. A. delegates.

However, unless methods and means are subjected to immediate change, by the laws of sequence and progression, ultimately state representation will be abolished. It would seem as if under present conditions, the day of state representation is almost spent. Subservient to special interests and playing the valet where they should rule, all too soon the welfare and rights of the rank and file will be trodden into insignificance.

To repeat in detail the future ways in which this welfare and these rights will suffer, would involve too much time and space. Sufficient to cite what happened in the Chicago Medical Society until the multiple voting privilege was abolished, and to remember the sufferings of the Illinois State Medical Society under the burden of this same Old Man of the Sea. Finally he was dumped.

As a result, both associations became comparatively free and unhandicapped motivations. Primarily the establishment of this unfair and undemocratic system of multiple voting privileges in the Chicago Medical Society, and subsequently the refusal of the sponsors of the vicious scheme to abolish it voluntarily, led to the elimination and to the continual surrender in the management of both the Chicago Medical Society and of the Illinois State Medical Society, of many of the men who sponsored this class privilege now in vogue in the A. M. A.

Equal franchise instead of multiple voting power proved an astonishing elixir in both the Chicago Medical Society and the Illinois State Medical Society.

In the Chicago Medical Society one member's vote means as much as does another member's vote! There, the man who does anything and everything in the ethical practice of medicine, for the sake of making sick people well, can have as much to say about the rules that shall be laid down for the profession as does the specialist de luxe. In the Chicago Medical Society the man who mixes and bakes the cake has as much voice about what goes into it as does the man, who, after the crucial labor is finished tops off the baking with pink sugar roses and silver wedding bells. In passing, it can not be reiterated too frequently that the same group of medico-political vinetenders who inflicted the multiple voting evil upon the Chicago Medical Society and the Illinois State Medical Society are suspected of

being responsible for the inauguration of the multiple voting system in the A. M. A..

Constructive protection of medical interests is demanded by honest medical men. Lack of attainment of this point by the profession betrays the mother science into a prostitution of purpose that is worse than murder.

Time has passed when any doctor worthy of the name could permit himself to glance through an epitome of conditions existent in medical affairs and say to himself,—

"Yes, it's pretty bad, all right, and something ought to be done about it. Wish I were in a position to run things, or was born to be a leader, but I never was much of a politician. Guess I'll leave it run along a little—*Somebody* will take care of it all right."

Therein lies the pinch. Honest, hardworking, ideal-respecting doctors with public welfare and the ethics of the profession at heart, have stood quietly by for too long a time letting certain "politicians" calmly "run things" and hence affairs medical have been manipulated with a skill to make ward-heelers envious. Delays are more than dangerous now—they have become actually fatal. The medical doughboys in the ranks must reach out, grab their muskets and their .44's, and get out into the front line trenches,—for their captains, and majors, and generals—God help us —have failed to win the fight. To find a soft seat for traitors in high places is a facile task. It is up to the men themselves to carry their own standards and lay down their own battle gauge, when, in the midst of a raging, running fight their officers make for a shelter tent within the enemy's line. This is just about what has happened. And if the rank and file fails to take time sufficient to do a little selective bayonetting among the official cliffs, there will result a slavery and a mutilation even worse than the confusion now upsetting the profession. This is as inevitable as rigor mortis in a five-hour corpse.

In the management of the A. M. A., the men of general medicine must make themselves heard. Not for one moment do fifty per cent of the doctors who keep the country well, dream of the systematic, Machiavellian methods by which the poison is mixed with the soup, day after day and year after year. They who do the mixing are protected very well. Year by year, the income of the general man of medicine is falling lower and lower, but the aggrandizement of those who are settled nicely within the enemy's lines, increases at the inverse ratio. If it were only the finances of the doughboy doctor that suffered, these semi-nonresistant individuals might find the way out by turning cobbler, or chauffeur, or even butler for their brothers in wealth, politics and specialism, but *the crime is manifestly against the health of the people!*

Cults are sweeping the country like wildfire. Is this odd? General medicine is discredited by the profession itself, when men in official positions in our great national organization sneer covertly at the work of "general men," and when socialistic pottage is served out benignly to the doughboy doctor instead of the professional recognition that is his birthright.

When the A. M. A. is run with a Tammany precision by a system of unfair and undemocratic representation, and men point the blowtorch of contempt at the doughboy doctor, what use is the public at large going to have for this medical sourdough? To the credit of the specialists who make up the personnel of the A. M. A. House of Delegates, let it be said that 95 per cent or even more, of them are in favor of abolishing the unfair, and undemocratic multiple voting now in vogue. This large percentage of membership believes that one man's vote should count as much as another's. Since Scriptural days, to sell one's brothers into bondage is held to be criminal beyond estimate. In the case of the medico-politicos, the fraternal Judaistic wampum is the multiple voting power system placed in those hands where it will do the most good towards "doing good" those who suspect least the chicanery of those in whom they have trusted freely.

Doughboy doctors must demand a change in the makeup of the personnel of the House of Delegates of the A. M. A., such as will insure the immediate abolition of those existing eighteen multiple voting privileges of the Sections, as constructive protection of medical interests;—the repeal of multiple representation and plural voting privileges by Section Delegates.

The keynote of this reform lies in tackling that famous "Block of Fifteen" and shattering it to bits. Remember that *fifteen state societies with only one delegate each are negatived, outvoted, and annihilated* every time that Block of Fifteen goes through its well-known performance of "Simon says 'thumbs up;' Simon says 'thumbs down.'" A state society can discipline an un-

ruly delegate. Nobody can do anything to this block of super-voters. They do as they please, and they please principally to do to death the rank and file. Meanwhile the rank and file, sitting by with comparatively small protest, has allowed the Block of Fifteen and the additional U. S. A.'s—Army, Navy and Public Health—to have its own pleasure in its own wild way.

So far as the rank and file is concerned, the personnel of the A. M. A. is led by the nose by this Block of Fifteen. Through this block, the scientific section of the A. M. A., with a membership of about "Five thousand fellows, and associate fellows," stands as the Begum of all who live and who die in the United States. Represented once through the delegates from their state societies, this Block of Fifteen gives these 5,000 self-appointed luminaries a double vote, and enables them to vitiate the wishes of fifteen entire states with a population of over ten million people.

Annals of the Chicago Medical Society show that under the special voting privileges one man managed to have nine votes for himself. Another had six votes. There were many other men with two or three votes apiece.

Repeated refusals to eliminate this unfair feature, brought about finally a referendum vote when the special voting privileges were wiped out on a basis of twenty to one. "History repeats itself." For the sake of the science of medicine itself, as well as for the sake of the health of the nation, and the future of civilization, the A. M. A. bosses should begin to look about them, and to secure a more general perspective upon the profession, instead of gazing contentedly in their gold-framed, plate glass mirrors, with pride in themselves as a crew of platinum pedestalled massebahs,—shrines for the living sacrifice of humanity, science and civilization!

THE RUSSIAN MATERNITY SYSTEM HAS DESTROYED, MORALLY, AS WELL AS PHYSICALLY, A WHOLE RUSSIAN GENERATION

A Crime Which Knows No Parallel in the History of the World

Since the passage of the Sheppard-Towner Maternity Act the fact that the opposition to this class of legislation has grown to such enormous proportions speaks well for the sense and character of the American people. The unwelcome publicity given to the real character of the Bill, led to the resignation of Miss Julia Lathrop, head of the children's bureau, and one of the bill's chief promoters,. Her successor, Miss Grace Abbott, is, like Miss Lathrop, a product of Hull House, although this fact, for some reason, was nowhere mentioned by the press.

The Children's Bureau, which is to have large sums annually from the Federal treasury for propaganda purposes, if the bill passes, has already issued a booklet at the expense of the tax payers, "Maternity Benefit Systems in Certain Foreign Countries" which is socialistic and bolshevistic in almost every line. This book gives unqualified endorsement to a socialists' book by Madam Kolontai, a Russian woman in the pay of Germany, who is "commissar of Public Welfare" under Lenin (see documents 1 and 7 issued by United States Bureau of Public Information, September, 1918). The work of her department, in taking children away from their parents and herding them together in the "care" of the soviet government, has had such disastrous results, notably with little girls, that it has been characterized by a distinguished Russian, Professor Boris Sokoloff, *as a crime which knows no paralell in the history of the world.* They have destroyed morally as well as physically a whole Russian generation. Sir Paul Dukes says, that the central tragedy of Russia today is the results of Bolshevist corruption of children under Madam Kolontai's "welfare" and "maternity" system.

NO ONE WILL REGRET THE PASSAGE OF THE SHEPPARD-TOWNER MATERNITY ACT MORE THAN THE MOTHERS WHO SPONSORED IT

Now that the Sheppard-Towner Maternity Bill is a law, no one will regret it more than the mothers who sponsored it. The following editorial from the *Miami, Florida, Herald* is very timely and shows that the laity are waking up to a realization of the danger of uplift legislation.

"It is very easy to say as soon as we have determined that something is going wrong, 'Let us legislate that wrong out of the way.' But as Augustus said, according to Sultonius, many years ago, 'Festina lente,' 'Make haste slowly.' In

our mad rush to congress for panaceas for this and that social ill, we are rapidly giving up our old-time freedom and assenting to the appointment of inspectors and officials who have no respect for our privacy nor our persons.

"That question has already been asked in the debate on the bill to take care of women in childbirth and the picture drawn by Senator Reed is not a pretty one. The whole agitation arose from the fact that someone discovered recently, by what means is unknown, that 25,000 newly-born children and mothers perished every year needlessly. And we are going to prevent all this slaughter of the innocents as usual by letting the politicians get more patronage and more jobs as if they were not already entrenched with patronage. Take for example the feature of the law which provides that midwives should be permitted to attend only such women as offer every prospect of having a normal labor.

"This, as Senator Reed points out, would require a physical examination of the women. In other words, every time there is to be a birth in this enormous country a public official would come into the house, whether you wanted him or not, to tell you if you needed a midwife or a specialist. The following procedure is then suggested: 'After a reputable physician or authorized examiner had certified that birth would very likely be a normal one, this could be further checked by the health department providing suitable blanks for the purpose and that they must be returned when the birth certificate is filed. Furthermore, the midwives should be required by law, even in the cases, which have been certified as presumably normal, to call a physician whenever labor lasts more than twenty-four hours or any abnormality develops. Such a procedure would have a highly educative effect upon the patients, especially upon the foreign-born.' And this is Senator Reed's comment, as printed in the Congressional Record: 'Yes, Mr. President, it will have a highly educative effect. It will teach our people to hate the government that invades their homes, that thrusts the ugly face of a politician, who tramped in Washington to get a job, into the sacred chamber of the woman about to give birth to a child.' Ah, did the women who so piously followed the lead of the cure-all reformers think of that? To quote Senator Reed again: 'To carry out this plan there must be created a vast army of officials, spies, snoopers, tattletales, informers and meddlers. According to the opinions of these reformers and theorists, no housewife can properly cook a meal unless instructed by them. Mothers are incapable of bearing children properly unless they have had at least a few lessons from women who have never given birth to a child.' Here is a new light on our dear paternalistic maternalistic legislation.

"If the reformers get their way they will soon be employed in sufficient force for the working part of the public to do double duty to let the loafing reformers tell them how best to spend the money which they earn. The reformers need earn no money. They will get paid for preaching like the active Dr. Crafts, who said that reforming was great fun although he did not get more than $3,000 or $4,000 a year for his work. Lots of people would do it for less.

"But we have ceased to think of freedom. A paid lobby, which sees great rewards if it can get the public so tightly bound that it can get away with anything, is succeeding in intimidating congress and the legislatures which are either so pusillinamous or so rotten that they accede to every repressive whim of these hypocrites who occupy themselves so much with the good of other people's souls, firmly assured as they must be that their own souls are lily white. It is time that we called a halt on the activities of those who so glibly tell us how to cure our ills without ever having demonstrated their capacity for anything but endless talk and endless denunciation.

"Now that the maternity bill is a law no one will regret it more than the mothers who sponsored it."

A BILL FOR

AN ACT to revise the law in relation to the practice of the treatment of human ailments for the better protection of the public health.

Section 1. Be it enacted by the People of the State of Illinois, represented in the General Assembly: This Act shall be known as the Medical Practice Act.

Section 2. No person shall practice medicine, or any of its branches, or midwifery, or any system or method of treating human ailments without the use of drugs or medicines and without operative surgery, without a valid, existing license so to do.

Section 3. No person shall, except as otherwise provided in this Act, hereafter receive such a license

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unless he shall pass an examination of his qualifications therefor by and satisfactorily to the Department

of Registration and Education, hereinafter referred to as the Department.

Section 4. Each applicant for such examination shall:

1. Make application for examination on blank forms prepared and furnished by the Department;

2. Submit evidence under oath satisfactory to the Department that:

(a) He is twenty-one years of age or over;

(b) He is of good moral character;

(c) He has the preliminary and professional education required by this Act;

3. Designate specifically the name, location and kind of professional school, college, or institution of which he is a graduate and the system or method of treatment under which he seeks, and will undertake, to practice;

4. Pay in advance to the Department fees as follows:

(a) For the examination to practice medicine in all of its branches, or to treat human ailments without the use of drugs or medicines and without operative surgery, ten dollars;

(b) For the examination to practice midwifery, five dollars.

Section 5. Minimum standards of professional education to be enforced by the Department in conducting examinations and issuing licenses shall be as follows:

1. For the practice of medicine in all of its branches:

(a) For an applicant who is a graduate, before July 1, 1923, of a medical college, that he is a graduate of a medical college which required as a prerequisite to graduation a four years' course of instruction in such medical college, or its equivalent, the time elapsing between the beginning of the first year and the ending of the fourth year having been not less than forty months, and which was reputable and in good standing in the judgment of the Department;

(b) For an applicant who is a graduate, on or after July 1, 1923, of a medical college, that he is a graduate of a medical college which required as a prerequisite to admission thereto a two years' course of instruction in a college of liberal arts, or its equivalent, and at least a four years' course of instruction in such medical college, or its equivalent, the time elapsing between the beginning of the first year and the ending of the fourth year in such medical college having been not less than forty months, and, in addition thereto, a course of training of not less than twelve months in a hospital, such college of liberal arts, medical college and hospital having been reputable and in good standing in the judgment of the Department;

2. For the practice of any system or method of treating human ailments without the use of drugs or medicines and without operative surgery:

(a) For an applicant who is a graduate, before July 1, 1923, that he is a graduate of a professional school, college or institution which taught the system or method of treating human ailments which he specifically designated in his application as the one which he would undertake to practice, and which required as a prerequisite to graduation a four years' course of instruction in such professional school, college or institution, or its equivalent, the time elapsing between the beginning of the first year and the ending of the fourth year having been not less than forty months, and which was reputable and in good standing in the judgment of the Department;

(b) For an applicant who is a graduate, on or after July 1, 1923, that he is a graduate of a professional school, college or institution which taught the system or method of treating human ailments which he specifically designated in his application as the one which he would undertake to practice, and which required as a prerequisite to admission thereto a one year's course of instruction (a two years' course of instruction after 1927) in a college of liberal arts, or its equivalent, and at least a four years' course of instruction in such professional school, college or institution, or its equivalent, the time elapsing between the beginning of the first year and the ending of the fourth year in such professional school, college or institution, having been not less than forty months, such college of liberal arts and professional school, college or institution having been reputable and in good standing in the judgment of the Department.

3. For the practice of midwifery:

(a) That he has studied midwifery sufficiently in the judgment of the Department to have been able to become proficient therein.

Section 6. The courses of instruction in high schools, or other schools, and colleges of liberal arts required by any medical college or professional school, college or institution, or required under any of the provisions of this Act, shall have been such as shall be satisfactory to the Department, and shall be evidenced with respect to any application in the manner required by the Department.

Section 7. All examinations provided for by this Act shall be conducted under rules and regulations prescribed from time to time by the Department. Examinations shall be held not less frequently than four times every year, at times and places prescribed by the Department, of which applicants shall be notified by the Department in writing, and may be conducted wholly or in part in writing.

Section 8. Examination of applicants who seek to practice medicine in all of its branches shall embrace the subjects of which knowledge is generally required of candidates for the degree of doctor of medicine by reputable medical colleges in the United States, and shall be such in the judgment of the Department as will determine the qualifications of applicants to practice medicine in all of its branches.

Section 9. Examination of applicants who seek to practice any system or method of treating human ailments without the use of drugs or medicines and without operative surgery shall be the same as required of applicants who seek to practice medicine in all of its branches, excepting therefrom materia

medica, therapeutics, surgery, obstetrics, and theory and practice, and shall be such in the judgment of the Department as will determine the qualifications of the applicant to practice the particular system or method of treating human ailments without the use of drugs or medicines and without operative surgery which he specifically designated in his application as the one which he would undertake to practice.

Section 10. Examination of applicants who seek to practice midwifery shall be such in the judgment of the Department as will determine the qualifications of applicants to practice midwifery.

Section 11. Every applicant successfully passing his examination shall be entitled to an appropriate license. The following kinds of licenses shall be issued:

1. To practice medicine in all of its branches, to applicants passing examinations therefor;

2. To treat human ailments without the use of drugs or medicines and without operative surgery, to applicants passing examinations therefor, the applicant under such a license to be specifically restricted by the terms thereof to the practice of the system or method which he specifically designated in his application as the one which he would undertake to practice.

3. To practice midwifery.

Section 12. The Department may in its discretion issue a license without examination to any person who has been licensed to practice medicine, or to practice the treatment of human ailments according to any system or method, in any other State, Territory, Country, or Province, upon the following conditions:

1. That the applicant is of good moral character;

2. That if the applicant seeks to practice medicine in all of its branches

(a) He is a graduate of a medical college, reputable and in good standing at the date of his graduation in the judgment of the Department.

(b) The requirements for a license to practice medicine in all of its branches in the particular State, Territory, Country or Province in which he is licensed are deemed by the Department to have been substantially equivalent to the requirements for a license to practice medicine in all of its branches in force in this State at the date of his license;

3. That if the applicant seeks to treat human ailments without the use of drugs or medicines and without operative surgery

(a) He is a graduate of a professional school, college or institution which taught the treatment of human ailments by the system or method which he specifically designated in his application as the one which he would undertake to practice, and which was reputable and in good standing at the date of his graduation in the judgment of the Department;

(b) The requirements for his license to practice the treatment of human ailments without the use of drugs or medicines and without operative surgery, according to the system or method which he specifically designated in his application as the one which he would undertake to practice, are deemed by the Department to have been substantially equivalent to the requirements for a license to practice such system or method in force in this State at the date of his license.

4. That the State, Territory, Country, or Province in which such applicant was licensed shall be then according a like privilege to persons so licensed under the authority of the laws of this State;

5. That the Department may in its discretion issue a license without examination to any graduate of a professional school, college, or institution teaching the treatment of human ailments, reputable and in good standing in the judgment of the Department, who has passed an examination for admission to the medical corps of the United States Army, or that of the United States Navy, or that of the United States Public Health Service, or who has passed any other examination deemed by the Department to have been at least equal in all substantial respects to the examinations required for admission to any such medical corps;

6. That applications for licenses without examination shall be filed with the Department under oath on blank forms prepared and furnished by the Department and shall set forth, and applicants therefor shall supply, such information respecting the life, education, professional practice, and moral character of applicants as the Department may require to be filed for its use.

Section 13. Every person receiving a license under this Act shall pay to the Department the following fees:

1. For a license to practice medicine in all of its branches, or for a license to practice any system or method of treating human ailments without the use of drugs or medicines and without operative surgery, five dollars;

2. For a license to a person without examination, twenty-five dollars.

3. For a license to practice midwifery, three dollars.

Section 14. Every person holding a license under this Act, and every person holding a license or certificate under any prior Act in this State regulating the practice of medicine or the practice of the treatment of human ailments in any manner as a business, shall have it recorded, if not already so recorded, in the office of the recorder of deeds in every county in which he regularly practices, and the recorder of deeds shall write or stamp thereon the date of such recording. Until such license or certificate shall be recorded the holder thereof shall not exercise any of the rights or privileges conferred therein. The recorder of deeds shall keep in a book provided for that purpose, and open to public inspection, a complete list of such licenses and certificates heretofore or hereafter recorded by him and his predecessors in office, including the date of the issue of each license or certificate, the name of the person therein, and the date of the recording thereof.

Section 15. The Department may revoke the license or certificate of any person issued under this Act, or issued under any other Act in this State, to practice medicine, or to practice the treatment of human ail-

ments in any manner, or to practice midwifery, or may refuse to grant a license under this Act, and may cause any license so revoked to be marked canceled on the records of any recorder of deeds, upon any of the following grounds:

1. Procuring, or aiding or abetting in procuring, or attempting to procure, such an abortion as was made unlawful at the time under the provisions of the criminal code of this State;

2. Commission of a felony, or of any crime involving moral turpitude;

3. Negligent or ignorant malpractice resulting in permanent injury or death of a patient;

4. Obtaining a fee, either directly or indirectly, either in money or in the form of anything else of value, or in the form of a financial profit as personal compensation, or as compensation, charge, profit or gain for an employer or for any other person or persons, on the representation that a manifestly incurable condition of sickness, disease or injury of any person can be permanently cured;

5. Making a wilfully false or fraudulent representation for the purpose of obtaining practice in his business, or for the purpose of obtaining money or anything else of value;

6. Habitual intemperance in the use of ardent spirits, narcotics or stimulants to such an extent as to incapacitate for performance of professional duties;

7. Holding one's self out to treat human ailments under any name other than his own, or the personation of any other physician;

8. Holding one's self out to treat or in fact wilfully treating, human ailments under any system or method of treatment other than that authorized by such license;

9. Having been declared insane by a court of competent jurisdiction and not thereafter having been lawfully declared sane;

10. Employment of fraud or deception in applying for or securing a license or certificate to practice the treatment of human ailments in any manner, or to practice midwifery, or in passing an examination therefor, or wilful and fraudulent violation of the rules and regulations of the Department governing examinations;

11. Holding one's self out to treat human ailments by making false or grossly improbable statements, or by specifically designating any disease, or group of diseases, and making extravagant claims of one's skill, or of the efficacy or value of one's medicine, treatment or remedy therefor;

12. Professional connection or association with, or lending one's name to, another for the illegal practice by another of the treatment of human ailments as a business, or professional connection or association with any person, firm, or corporation holding himself, themselves, or itself out in any manner contrary to law.

13. Other unprofessional or dishonorable conduct.

Section 16. The Department shall have authority to administer oaths, summon witnesses and take testimony in all matters relating to its duties under this Act. When the Department in the transaction of any of its business or the conduct of any hearing under this Act, or when any person interested in any such business or hearing, shall desire to secure the presence or testimony of any person before the Department, the Department, or such person, may procure subpoenas from the Clerk of the Circuit Court, or of the Circuit or Superior court in Cook County, wherein such business or hearing is to be transacted or conducted before the Department, and the clerk of said court shall issue such subpoenas in the name of the people of the State of Illinois, commanding the persons whose names shall be given to such clerk by the Department, or by such person so interested in such business or hearing, to appear before the Department at a certain time and place fixed by the Department for the transaction of such business or conduct of such hearing and then and there to testify in respect to such business or hearing. If any person so commanded to appear and testify shall fail or refuse to obey such subpoena, or shall wilfully testify falsely before the Department, he shall be dealt with by said court in the same manner and to the same effect as though such subpoena had commanded such person to appear and testify in a cause on trial in said court. Fees, or other charges or payments, which may be demanded by any person so commanded to appear and testify, shall be only those which may be demanded by witnesses in a cause on trial in said court and only under the same circumstances. Such subpoena shall be served and returned into Court in the same manner as are subpoenas for trials in said court, and they shall be in substantially the same form. The Department, or such person so interested, may take the deposition of any person by application to such court under the condition and circumstances, so far as can be made applicable, under which said court may cause depositions of persons to be taken for use in the trial of cases before it.

Section 17. For the purpose of considering such revocation of any such license or certificate:

1. The Department shall have the power upon its own initiative to take notice of the purported commission by any person holding such a license or certificate of any act constituting any of the foregoing grounds for the revocation of any such license or certificate, and may make an investigation to determine the probability of any such act by any such person, and, if it finds such probability great, it shall notify such persons of such findings, and it shall give at least ten days' notice to him of the time and place and the particular grounds when, where and upon which it will conduct a hearing for the presentation of evidence as to whether he has committed such act constituting such ground or grounds specified therein. At such hearing such persons shall be accorded ample opportunity to present to the Department in his defense in person and by counsel such statements, testimony, evidence and argument as he may desire to bring to the attention of the Department.

2. Any person may file a sworn complaint before the Department against a person who holds such a

license or certificate, or who is an applicant for such a license, with a view of having the Department revoke any such license or certificate, or refuse to grant any such license, on any of the foregoing grounds. In case such complaint is filed against such person, and it shall appear to the Department to state probable cause, he shall be given a hearing thereon by the Department. A copy of such complaint, together with a notice of at least ten days of the time and place when the Department will conduct a hearing thereon, shall be given such person against whom such complaint has been made, and he shall be accorded ample opportunity to present to the Department in his defense in person and by counsel such statements, testimony, evidence and argument as he may desire to bring to the attention of the Department.

3. Any notice required under this section may be served by registered mail. The Department, in conducting any such hearing, shall not be bound to apply the rules of evidence governing trials in courts. It may at any time after the refusal or revocation of a license or certificate as aforesaid grant or restore it to the person affected without examination.

Section 18. The Department shall have power and it shall be its duty

1. To make rules for establishing reasonable minimum standards of educational requirements to be observed by medical colleges, or by any professional school, college, or institution teaching any system or method of treating human ailments, or by colleges of midwifery, and to determine the reputability and good standing of all schools, colleges, and institutions now, heretofore, or hereafter existing;

2. To require satisfactory proof whether any medical college, or professional school, college, or institution teaching any system or method of treating human ailments, or any college of midwifery, enforced at any particular time in the past the standard of preliminary education requisite to admission thereto:

3. To determine the standard of literary or scientific colleges, high schools, seminaries, normal schools, preparatory schools, graded schools, and the like, in the discharge of its duties.

Section 19. Nothing in this Act shall be construed to prohibit any person from using any antiseptic prescribed by the Department of Public Health of the State for the prevention of the spread of communicable diseases, nor from using antidotes, or rendering any other service, in any case of emergency if without charge or compensation.

Section 20. All licenses and certificates heretofore legally issued by authority of law in this State permitting the holder thereof to practice medicine, or to treat human ailments in any other manner, or to practice midwifery, and valid and in full force and effect on the taking effect of this Act, shall have the same force and effect, and be subject to the same authority of the Department to revoke them, as licenses issued under this Act.

Section 21. If any section, subdivision, sentence or clause of this Act shall be held to be invalid or unconstitutional, such decision shall not affect the remaining parts of this Act.

Section 22. If any person shall hold himself out to the public as being engaged in the diagnosis or treatment of ailments of human beings; or shall suggest, recommend or prescribe any form of treatment for the palliation, relief or cure of any physical or mental ailment of any person with the intention of receiving therefor, either directly or indirectly, any fee, gift, or compensation whatsoever; or shall diagnosticate or attempt to diagnosticate, operate upon, profess to heal, prescribe for, or otherwise treat any ailment, or supposed ailment, of another; or shall maintain an office for examination or treatment of persons afflicted, or alleged or supposed to be afflicted, by any ailment; or shall attach the title Doctor, Physician, Surgeon, M. D., or any other word or abbreviation to his name, indicative that he is engaged in the treatment of human ailments as a business; and shall not then possess in full force and virtue a valid license issued by the authority of this State to practice the treatment of human ailments in any manner, he shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than one hundred dollars nor more than five hundred dollars, or by confinement in the county jail not more than one year, or by both such fine and imprisonment, in the discretion of the court.

Section 23. Any person who shall practice medicine in any of its branches, or shall treat human ailments by any system or method, or shall practice midwifery, without a valid existing license under the laws of this State so to do, shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than one hundred dollars nor more than five hundred dollars, or by confinement in the county jail not more than one year, or by both such fine and imprisonment, in the discretion of the court.

Section 24. Any person who shall treat human ailments by the use of drugs, or medicines, or operative surgery (except any drug or medicine required by law to be used in midwifery, when such person is entitled to practice midwifery) and shall have only a license to treat human ailments without the use of drugs or medicines and without operative surgery, shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than one hundred dollars nor more than five hundred dollars, or by confinement in the county jail not more than one year, or by both such fine and imprisonment, in the discretion of the court.

Section 25. Any person who shall treat human ailments in any manner not constituting midwifery, and shall have only a license to practice midwifery, shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than one hundred dollars nor more than five hundred dollars, or by confinement in the county jail not more than one year, or by both such fine and imprisonment, in the discretion of the court.

Section 26. Any person, not being licensed in this

State to practice medicine in all of its branches, who shall hold himself out by any sign or advertisement, or by a writing of any kind, to treat human ailments without therein attaching to his name a word or words indicating the system, method or kind of practice which he is lawfully licensed to pursue in this State, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than one hundred dollars nor more than five hundred dollars, or by confinement in the county jail not more than one year, or by both such fine and imprisonment, in the discretion of the court.

Section 27. Any person, not being licensed in this State to practice medicine in all of its branches, or not being licensed in this State specifically to practice midwifery either separately or in connection with the treatment of human ailments without the use of drugs or medicines and without operative surgery, who shall practice midwifery, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than one hundred dollars nor more than five hundred dollars, or by confinement in the county jail not more than one year, or by both such fine and imprisonment, in the discretion of the court.

Section 28. Any person who shall obtain a fee, either directly or indirectly, either in money or in the form of any thing else of value, or in the form of a financial profit either as personal compensation or as compensation, charge, profit, or gain for an employer, or any other person or persons, on the representation that he can permanently cure a manifestly incurable condition of sickness, disease or injury of any person, shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than one hundred dollars nor more than five hundred dollars, or by confinement in the county jail not more than one year, or by both such fine and imprisonment, in the discretion of the court.

Section 29. Any person who shall hold himself out to treat human ailments under any name other than his own, or by the personation of any physician, shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than one hundred dollars nor more than five hundred dollars, or by confinement in the county jail not more than one year, or by both such fine and imprisonment, in the discretion of the court.

Section 30. Any person who shall hold himself out to treat human ailments by any system or method of treatment other than that for which he holds a valid, existing license under the laws of this State, shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than one hundred dollars nor more than five hundred dollars, or by confinement in the county jail not more than one year, or by both such fine and imprisonment, in the discretion of the court.

Section 31. Any person who shall employ fraud or deception in applying for or securing a license under this Act, or in passing any examination therefor, shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than one hundred dollars nor more than five hundred dollars, or by confinement in the county jail not more than one year, or by both such fine and imprisonment, in the discretion of the court.

Section 32. Any person who shall in connection with any application or examination before the Department file, or attempt to file, with the Department as his own, the diploma, license or certificate of another, shall be guilty of a felony and shall be punished therefor as the law shall prescribe at the time for forgery.

Section 33. Any person who shall swear, or affirm, or make or file any affidavit, wilfully, corruptly and falsely, in filing or prosecuting his application for a license before the Department, or in submitting any complaint or evidence to the Department under the provisions of this Act or under any rule or regulation of the Department, shall be guilty of a felony and shall be punished therefor as the law shall prescribe at the time for perjury.

Section 34. All such fines shall inure to the benefit of the Department.

Section 35. This Act shall not prohibit a dentist, or pharmacist, or optometrist, or other person, from lawfully carrying on his particular business under any valid, existing Act of this State regulatory thereof.

Section 36. The following Acts are hereby repealed: "An Act to regulate the practice of medicine in the State of Illinois and to repeal an Act therein named," approved April 24, 1899, and "an Act to revise the law relative to the practice of the art of treating human ailments," approved June 25, 1917; and all Acts and parts of Acts in conflict or inconsistent herewith are hereby repealed.

Section 37. Whereas an emergency exists, therefore this Act shall be in force and effect from and after its passage and approval.

MORE CHILDREN, HEALTHIER CHILDREN

A claim commonly made by birth-controllers is that a low birth-rate almost miraculously creates a low death-rate. This claim is not sustained by figures recently sent to the New York *Herald* from its Paris office. According to these statistics, while France can show an annual increase of 117,000, the Germans beyond the Rhine can show 625,000. "At this rate," comments the editor, "it will take France twenty years to recuperate from her war-losses, and Germany less than seven."

More to the present purpose, however, is the fact that France with a low birth-rate suffers from a higher death-rate than Germany, the figures being, respectively, 17.7 and 14.8 per 1,000 of population. In his valuable book lately published by Kenedy, Dr. H. G. Sutherland compares several similar sets of figures. Thus, for instance, during the last quarter of the nineteenth century, England showed a steadily falling birth-rate and a steadily rising death-rate. These figures assume added significance when the improved methods of infant-care introduced during

that period, are recalled. Again, in Ireland in 1918, the crude birth-rate was 19.9 and the infant-mortality rate, 86. In England and Wales, the birth-rate was 17.7 and the infant death-rate, 97. In some of the Northern boroughs the rate rose to 120. The lowest mortality-rate was 63 in England, and in Ireland (Connaught) 50.5. "These cold figures prove that, in this matter at least, the poorest Irish peasants are richer than the people in England." Similarly, a table covering two five-year periods in twenty Departments of France, also prepared by Dr. Sutherland, proves that "the death-rate was lower in the ten Departments having the highest birth-rate in France, than in the ten Departments having the lowest birth-rate." In addition, the low birth-rate Departments were, before 1914, approaching depopulation.

Thus the very sources to which the birth-controllers appeal, furnish them no justification. Yet it should be remembered that a high birth-rate is neither the cause of a high death-rate, nor the guarantee of a low death-rate. As statisticians agree, a relation of cause and effect between the two rates cannot be established. Nor need it be said that these rates have no bearing on the moral aspects of the case. The use of contraceptives would be indefensible even if the children of large families died off like flies in a frost, and the selected one or two in a birth-controller's brood overtopped the years of Methuselah.

REVOLT OF PHYSICIANS FROM THE VOLSTEAD ACT

Sue to Annul Dry Law

GROUP OF EMINENT NEW YORK PHYSICIANS SUE TO PROTECT MEDICAL RIGHTS

The *New York Times* of November 19 contained a news item in which it was announced that 105 well known New York physicians had united in an Association for the Protection of Constitutional Rights to determine if certain regulations issued by the prohibition commissioner are not at variance with the Prohibition Amendment, which prohibits liquor for beverage use, but provides for its use in medical practice. The item follows in part:

Action was begun here yesterday in the United States District Court to annual the provisions of the prohibition law in so far as it restricts physicians to a limited amount of whisky or other alcoholic beverages in the treatment of patients. In other words, physicians claim the right of full freedom in practice.

At the instance of Joseph S. Auerbach of the law firm of Davies, Auerbach & Cornell, representing Dr. Samuel W. Lambert, Dean Emeritus of the College of Physicians and Surgeons of Columbia University, subpoenas were issued by the Clerk of the United States District Court requiring Edward C. Yellowley, Acting Prohibition Director for New York; David H. Blair, Commissioner of Internal Revenue, and William Hayward, United States Attorney, to appear before the Court and show cause why the provisions of laws enacted under the Eighteenth Amendment in so far as they relate to physicians in the practice of medicine should not be judicially declared inoperative.

The plaintiff represents a considerable body of eminent medical men in this city, and the intention is to carry the suit to the United States Supreme Court as speedily as possible.

The action was not started as an outcome of the deliberations of the American Medical Association at its St. Louis meeting last May, when that body reversed itself by declaring that alcohol was a necessary therapeutic agent. In fact, the suit was decided upon some months previous to that meeting.

FORM PROTECTIVE ASSOCIATION

Determined to lift from the medical profession the restrictions of the Volstead act, so far as it affects the practice of their art, 105 physicians and surgeons in this city banded themselves together for action. The body thus formed has been named the Association for the Protection of Constitutional Rights. Its officers are: Dr. Samuel W. Lambert, president; Dr. James F. McKernon, vice-president; Dr. Warren Coleman, secretary; and Dr. Frederic E. Sondern, treasurer. The following compose the executive committee: Dr. Nathan E. Brill, Dr. William K. Draper, Dr. Charles L. Dana, Dr. J. T. Gorton and Dr. J. Bentley Squier.

The association distinctly disclaims connection with any lay organization or with any anti-prohibition movement. Indeed some of its members are ardent prohibitionists, but are opposed to government interferences with their methods of practicing therapeutics, a subject, they assert, concerning which Congress knows nothing.

It will be recalled that similar action has been suggested by the National Association of Retail Druggists. It has been suggested that this method may be more effective than merely protesting against regulations that apparently are at variance with the law.

The movement is not unexpected; the wonder is that rebellion against such an unwarranted invasion of the field of medical practice and the destruction of the constitutional rights of physicians has been so long delayed. But that is characteristic with American people, of the law-abiding, forward-looking element among us, and as a class the medical profession is not outranked by any other class as active, energetic upbuilders of the general welfare.

All physicians knew that the adoption of the eighteenth amendment would curtail their professional rights and advocates of the therapeutic value of alcohol believed some of their patients would suffer deprivation thereby; however, all physicians were willing "to be shown" that the limitation of alcohol as a therapeutic agent was beneficial to the country and not harmful to the sick. The invasion of their professional rights was regarded as a secondary matter and not to be considered if by obedience to this drastic law humanity would be served.

Now after four years of enforcement the evidence is accumulating that resignation to this oppressive

measure in so far as is negatives the free exercise of his judgment of when to prescribe whisky, is a vain sacrifice by the physician.

The movement inaugurated by Dr. Lambert and others will be watched with much interest by the medical profession of the entire country. It is not an anti-prohibition movement; in fact, according to the news dispatches some of the physicians are strict prohibitionists and all of them are opposed to the promiscuous and wide-open sale of intoxicants, but it is an attempt to overthrow the autocracy of self-appointed critics and to prevent further invasion of the professional rights of physicians as conservators of the health of the people.

A PROTEST AGAINST A FEDERAL REGULATION

The Academy of Medicine of Cleveland has filed a protest with the Commissioner of Internal Revenue and with the Federal Prohibition Commissioner, against the regulation requiring the physician to enter on his prescription for liquor the name of the pharmacist by whom it is to be filled. In Cleveland, only a few druggists have taken out liquor permits, and, particularly among physicians who but seldom prescribe liquor, the identity of those few permit holders is not always known. A prescription written in an emergency has not infrequently been taken by the patient to the pharmacist named by the physician, only to find that he cannot lawfully fill it. The trouble and delay that certainly result, and the harm that may result, are called to the attention of the two commissioners in a vigorous protest made by the Cleveland Academy of Medicine.

THE MODERN TREATMENT OF THE WEAK OR FLAT-FOOT

G. J. McChesney, San Francisco, in the *California State Journal of Medicine*, October, 1922, says:

The subject of arch strain is old and trite, and consequently neglected far too much nowadays in orthopedic literature. With the exception of an article on felt arch supports in the last number of the *Journal of Bone and Joint Diseases* there has been nothing for a year at least. And this is not because cases of arch strain are becoming infrequent. In the practice of most orthopedic surgeons, as well as in my own, the problem of arch strain and arch support is twenty-five to fifty per cent of the total. Neither does this scarcity of the literature mean that the profession is a unit as regards methods of procedure. The varying types of metal arch supports, as well as those of leather, felt, or what not, compete for our favor with various modifications of heels, shoes, etc. The patient, as a result, goes from one to another device with little satisfaction or relief.

My excuse for reading this paper is to present a plea for a return to physiological and natural methods of treatment. Simplicity is allied to efficiency, but this is too often lost sight of in treating the pronated or weak foot. The symptoms of these conditions are too familiar to require repetition, but let us review facts concerning the anatomy which we all know very well but too often fail to keep in mind.

The internal longitudinal arch of the foot is composed of the inner three metatarsal bones, the three cuneiform bones, the scaphoid, astragalus and os calcis. They are so arranged as to form a curve convexity upward, and highest on the inner side. The summit of this arch or dome is formed by the head of the astragalus, resting upon the calcaneo-scaphoid ligament. This ligament is also called the spring ligament, on account of its numerous elastic fibres, and here lies the burden of my song. The function of the internal longitudinal arch is primarily that of a spring to provide spring and elasticity to the gait, to ease the jar of the impact of the body weight against the ground, but not to bear the whole body weight all the time. The arch, then, is a spring in its action, is the shape of a long automobile spring, and when causing pain due to overstrain from overweighting, should be treated along mechanical rules applied in treating overweighted springs, and nothing else. Does a mechanic in treating a weak or overstrained auto spring put a prop or support in its middle? This would be foolish, for thereby all spring action or function would be nullified. The same rule applies to our use of so-called arch supports. They destroy the spring action of the arch and hence their use is inherently vicious, as no part of our body can be considered as healthy if not performing the function for which Nature intended it. In addition, a deleterious pressure is exerted upon the short flexor muscles and plantar fascia, and causes a pressure atrophy of these structures which retards a return to normal function after this pressure is removed.

The other well-known disadvantage of arch supports I'll not dwell upon—their cumbersomeness, weights, cutting of shoes, etc.

If, then, we should not support our arches by a central prop, what is best to do? To return to our mechanical engineering simile, the first measure is to remove our load or a large part of it; the second is to strengthen the elements of the arch itself, not prop it up. To remove the load, I insist on two things, first, proper posture; second, raised inner sides of shoes. In almost all cases of arch strain, the line of weight passes down the tibiae to the inner sides of the feet. Usually it can be demonstrated to the patient standing, and also to the friends or relatives observing from the rear, that the line of weight passes down to the inner side of the everted os calcis. If the os calcis is everted, the rest of the foot is everted, as it is an axiom in orthopedics that the way the os calcis goes the rest of the foot goes. This, then, means that the greater part of the body weight is upon the inner side of the foot, or the internal longitudinal arch, instead of upon the external longitudinal arch or outer side of the foot, which is almost flat, and is intended to bear the bulk of the weight, leaving the internal longitudinal arch free for its function of a spring. This latter result can be partially brought about by

insisting upon the proper posture, i. e. by standing and walking with the feet parallel and not toed out, Charlie Chaplin style, as we have been taught to do by our mothers, teachers, dancing-school teachers, military instructors, etc., from time immemorial. In addition, high-laced shoes, not Oxfords, with the inner sides of soles and heels raised one-quarter inch in average, and three-eighths of an inch in severe cases, are ordered. It is my practice to measure and inspect these alterations myself before the shoes are worn, as cobblers are careless and have to be checked up at all times. The shoes are then tried on and the line of weight-bearing through the foot to the ground again noted, especially from the rear through the os calcis.

These simple measures are usually sufficient to remove the principal load from the overstrained arch. The fault has often been committed of not building up the shoes enough. Very rarely is one-eighth of an inch raise enough. I find one-quarter inch not too much even for children where it is a routine measure, and three-eighths is often necessary in severe cases in adults. Some strain of the peroneal tendons or the external lateral ligament of the ankle-joint may be felt for a few days, but soon disappears. It rarely requires adhesive strapping.

The second mechanical or engineering measure employed is the strengthening of the arch components; which here means exercise to strengthen the muscles and ligaments that hold up the arch. The following are two simple exercises: First, inverting the feet while standing, or balancing upon the outer edges of the feet; and second, rising upon the toes and then slowly coming down upon the outer edges of the feet to the outer edges of the heels. These exercises should be done as often as possible or practicable, and it is always emphasized that upon the faithfulness with which these exercises are done depends the speed of the cure and the cessation of the need for building up the shoes. There are no new features about these exercises. They are designed, of course, to strengthen principally the Tibialis Anticus and Posticus muscles, which we must agree are the ones principally involved, especially the latter, which exerts a direct upward pull upon the head of the astragalus. As the muscles of the foot are designed to do their principal work while the individual is walking or standing, exercises are of the most value while in the weight-bearing position, and exercises while sitting do not give the arch-supporting muscles enough to do. This is an important point, and explains why exercises while sitting often do little good and, in fact, may tire the legs excessively from the unnatural work the muscles are called upon to do.

With these simple measures immediate relief is afforded to all but the most acute cases of arch strain, and these are really better off in bed till the acute symptoms subside. Arch supports may get them up a little sooner, but far from cured. In fact, the chief mistake in the use of plates, aside from the using of them at all, is the wearing of them far too long. Instead of being provided as a very temporary appliance and to be supplanted by other measures as soon as possible, they are put on as a permanent curative device and no time limit set upon their use. Consequently very soon the patient finds out for himself that he is just as comfortable without arch supports as with them, and not really comfortable in either case —hence not cured.

The softer the material used, the less the discomfort and damage to the arch-supporting structures, but the same inherent objection applies to all, i. e. they do not tend to restore to the arch its proper function, that of a spring. Hence they are not a bit curative and only sometimes palliative.

I have found that this method of treatment applies to the very young as well as to the adult, but sometimes the advanced in years, with arthritis, will not tolerate a changed line of weight-bearing and are better off with soft pads under the arch to distribute the weight on the tender feet, and any idea of restoring the spring action of the arch hardly advisable on account of the age of the patient.

In injuries to the feet especially it is important to strive at all times for a restoration of proper function. In Potts fracture especially, and in all non-ankylosing fractures about the ankle-joint or in the tarsus, the foot should be put up in supination in the splint; that is, in the very position I have been trying to prove is the best one for a weak foot. When the splint is removed, why put a hard metal support under the tenderest and weakest part of the foot, with no provision for removing most of the weight by simply continuing the supinated position in shoes built up usually three-eighths of an inch? The fear that the arch will be strained if no support is put under it is quite groundless if this simple precaution is taken, supplemented, of course, by voluntary exercises along the lines previously described.

In all foot and ankle fractures, where no ankylosis is a result, I have obtained very easily return of function by these measures, and if in these very exaggerated cases of weak foot no so-called arch-supports are needed, why should they be needed in the milder, non-traumatic cases, even though of longer duration?

Of course, cases with a spastic element, peroneal or otherwise, cases of hollow or claw foot, rigid feet, and cases of trouble in the anterior arch so-called, can be included as suitable for this treatment as a secondary measure. I insist on no especial type of shoe, so long as they are high laced, not pointed toes, and have nothing higher than a Cuban or military heel. The more sensible the shoe the quicker the relief goes without saying.

In conclusion, I wish to emphasize that there is nothing new or original in this treatment; it is known to all orthopedic surgeons as well as the principles upon which the treatment is based. But it is all too much neglected, and in its stead there is used too much an elaborate scheme of plaster molds, upon which metal plates are fashioned, to be later modified by hammering, tempering, etc.

Let us get back to simpler methods based upon physiological principles even if our patients make us fewer visits and our pocketbooks suffer thereby.

THE TRUE ATTITUDE OF THE PHYSICIAN TOWARD DRUGLESS THERAPISTS

It is a hopeful sign and one which should be of interest to the medical profession, that in the past year many lay magazines have considered the subjects of osteopathy, chiropractic and other forms of drugless therapy in their issues. The general public has considered the medical profession as narrow-minded, antagonistic and unalterably against any cult that desires to practice any form of the healing art other than regular medicine.

This attitude is not the true one of the profession, and we are pleased to see articles appear in the lay press which present in a true and dispassionate way the methods of practice which we as the medical profession have been accused of opposing from a professional viewpoint. The attitude of the profession is not against any one practicing whatsoever they wish providing they have the proper preliminary and premedical education. It is necessary to have this preparation in order to understand the human body both in health and disease prior to the practice of any form of medicine or drugless therapy.

It is for the purpose of calling the attention of our readers to the willingness of lay journals to present to the world in a proper manner the facts concerning drugless therapy that we direct their attention to an article which appeared in the July number of the *Atlantic Monthly* under title of "Osteopathy, Chiropractic, and the Profession of Medicine," by Channing Frothingham. This article should be read carefully by every member of the medical profession in this state, as it presents many conclusions which are illuminating. Under osteopathy he says:

"The present knowledge in regard to osteopathy seems to warrant its being considered of value in the treatment of a limited number of abnormal conditions, but it does not warrant looking upon this profession as being a worthy substitute for the established facts in general medical science. Therefore, osteopathy should take its place in the science of medicine as one of the various therapeutic procedures available for the treatment of disease. Like other therapeutic agents, its use should be limited to those cases in which it is of value."

As physicians we should sift the wheat from the chaff and should not be willing either to accept or oppose a principle until thoroughly investigated, and yet we feel that if preliminary and premedical education were adopted for all in the state, that many who now are and possibly will in the future practice this branch, will eventually become a part of the practice of medicine. Under chiropractic Channing Frothingham says:

"The medical profession, on its part, should not be intolerant of the study and application of any new therapeutic agent, simply because those who advocate it present their claim with more enthusiasm than is justified by the facts, or because the advocates are not trained in general medical knowledge. It is only too well established that methods for the treatment of disease have been taken up with enthusiam by the medical profession, only to be eventually discarded as either useless or even harmful to the patient."

True, for all time in the past the medical profession has been slow to adopt any new theory until it has been proved of value, and we still should be of open mind to learn whether chiropractic has anything of value which should be practiced for the treatment or cure of disease. If we are to be tolerant of every new fad that is introduced without investigation, the medical profession will soon lose caste to a greater extent than it has in the past. It is equally true that the practice of medicine is not a complete science, nor will it ever be, and continued investigation and practice leads us from one stage to another in search of truths which will relieve human suffering. He further says:

"In regard to the public health, the public should also be intolerant of anyone who takes the place of the physician, unless trained in general medical knowledge. For, although an individual may gamble with his own life regardless of public opinion, he has no right, so far as the public is concerned, to be a factor in the spread of contagious diseases, such as diphtheria, scarlet fever, syphilis, typhoid fever, plague, and the rest, with resulting death and suffering for the public. Such a condition may and does arise, if the public allows individuals to treat diseases who are improperly trained in recognizing them. For a patient may well think that he has consulted a properly qualified physician, when he has been to one of these individuals allowed by law to treat diseased conditions; and therefore considers that his responsibility to the public has been discharged."

Such should be the stand not only of physicians, but of every thoughtful-minded individual in society who considers the protection of public health as of most vital importance in everyday life. In concluding this article the writer states:

"The public should demand that all those who are to practice the healing art, in any manner, as a profession, should have a general knowledge of the established facts in medicine, and the relation of special diseases to the public health. In other words, in all the states there should be one general board of registration in medicine, and the standards established by that board should be high. With the education necessary to pass such a board, the sincere therapeutic enthusiast, be he osteopath, chiropractor, electrotherapeutist, faith healer, or herb doctor, will probably not do much harm to the individual, or be a source of danger to the public health."

Mindful of the continued accusations which come to the profession, is it not best for us to stand upon the principle, which has ever been true in medicine, that the individual rights of the public are to be conserved, but that the practice of the healing art should

never be placed in the hands of any but those thoroughly educated and those who have knowledge such as renders them of value in the healing of the sick? —*Pennsylvania Medical Journal,* September, 1922.

THE CHILD MENACE AND THE DIVORCE PROBLEM

The *Dearborn Independent,* in the December 30, 1922, issue says:

The wail of those who cry because certain classes are not furnishing any children to society may be soothed by reflection on society's good fortune not to be plessed by reproductions of those classes. It is a wonder that societies have not been organized to send formal letters of thanks to those who have preferred to let their kind of humanity die out of the world with them. It would be a happy solution if all the useless human strains could be eliminated as easily.

There is, however, a problem complicated by children, and that is, the divorce problem. All that can ever be said about divorce itself has been said, and saying will not change it. It is a disease that will run its course until all those susceptible to it have either resisted or succumbed to it, and then like other diseases, its soil being exhausted, it will be less common.

Children are a sufficient reason for self-imposed restraint upon those intending a resort to the divorce court, but the sad fact is that this restraint is seldom exercised. Indeed, an ugly development has come in the status of the "divorce child." It was quite bad enough when the growing boy, home from college for the Christmas holidays, went round to one house to see his mother who was married to another man, and then round to another house to see his father who was married to another woman. That was so bad that the mixture of selfishness with the tragedy made it a shuddering circumstance to all properly sensitive minds.

But that is not the worst. Children are now appearing in divorce courts as pawns. If the woman can get the child or children, she can use them to hold up the man for money. If the man can get the child, then he may go free of money obligation to the woman. The possession of the child, its money value to the case, has been so disgustingly apparent in a number of instances that recently a Detroit judge broke forth into righteously indignant speech about it, charging the wrangling parents that neither of them loved the child or they would never have dragged its innocent fortunes as far as the divorce court.

The divorce lawyer, a peculiarly questionable type, has learned the strategy of the "divorce child." It is time for divorce judges, who have seemed to be a little slow in the matter, to learn the strategy of the divorce lawyer.

THE INDIFFERENCE OF THE MEDICAL PROFESSION IN LEGAL MATTERS

Experience has taught us that when we want to really accomplish a task it is better to give it to a busy man; when we want it to be done more rapidly and with accuracy we assign it to a very busy man. The medical profession has taken this so literally that when legal enactment is threatened they sit back supinely trusting that their duly elected officials will do all that is necessary to protect them, and just as thoroughly determined that they will do nothing to protect themselves—a most instructive example of "expectant treatment."

Is it not about time that we awake to the needs of self-defense? Each time the houses at Albany adjourn without actually declaring the practice of medicine to be a felony, the profession takes a long breath, and with a feeling similar to Micawber, on the first of the year, when he renewed his I. O. U.'s, they "thank God that's over."

The chiropractors think enough of legalizing their chicanery to pledge large sums for the furtherance of their interests—they pay the legal profession well to defend them—they appear both in person and by testimonial—they plead persecution and prosecution—they weep great salt tears on the shoulders of our lawmakers, while at the same time they are stealing the lawmakers' birthright, viz., safeguarding the public from quack and charlatan.

Let the medical profession start its own public propaganda. Tell the people the truth. We plead only for a just and proper legal restraint and a regents' control which is applicable to all professions in the State. We think there is a difference between six years in the study and preparation for a medical career and six weeks in the preparation of a chiropractic. We don't believe that a chauffeur, who could not write his name, is qualified to be a full-fledged chiropractor or anything else in the above time. We may be prejudiced, but we state it as an honest conviction. On the other hand, ought we to blame the embryo chiropractor? It is a short-cut to a gullible public—the Palmer School, which dominates the advertising, pleads his cause for him and does it well. He has only to raise funds to pay for the course, save sufficient to purchase a sign and table, and there you are—perfectly simple, simply perfect.

It is unfortunate that the medical profession does not take on self-insurance—pay dues to the State Society sufficient to maintain the proper machinery for its own protection. We pay two or three hundred dollars yearly as dues in a golf club—health insurance. Think of it—three hundred dollars for health and amusement, and the Medical Society of the State of New York gets five dollars each from its 9,500 members to carry on the work of survival, not to mention the 5,500 other physicians in the State who do not care enough about medical matters to even belong to the State organization.

We never will be able to do the medical business of the State on a five dollar per capita basis. Let the need of a greater revenue be agitated and published, and we believe that with better organization and a wider knowledge of facts and the good accomplished both profession and laity will realize their mutual obligation.—*N. Y. State Medical Journal.*

A CORRECTION— DR. BAYARD HOLMES.

In making up the December Journal Dr. Bayard Holmes' name was printed after an announcement by the Abbott Laboratories on page 492 by mistake. We regret the error and hereby offer our apologies to all concerned.

WANTED—STORIES BY DR. J. ADAMS ALLEN.

All the older graduates of Rush Medical College will be grateful to have the privilege of reading some of the inimitable stories of their perennial "Uncle." Some of his "Nephews" may have such a collection among the notes taken when attending his lectures. The JOURNAL will reproduce any that come to hand and the Editor will be pleased to receive and acknowledge any material sent for publication.

FREAK ANTI-VIVISECTION LAW PROPOSED IN CALIFORNIA

The following from the October issue of the *California State Medical Journal* is reproduced for the benefit of our readers:

The anti-vivisectionists are at it again. They have an initiative measure on the ballot this fall under which you may not perform an experiment on an animal, even under anesthetic or without pain, if the purpose is scientific investigation, but you may cut an animal open, mutilate or burn it, painfully and without anesthetic, if the purpose is convenience in farming. The law expressly says both of these things, in direct language. Animals may be caught alive, in steel traps, or shot and wounded, for sport or profit; they may be killed for food, painfully; they may be branded with hot iron, to identify them as property, or dehorned, gelded, spayed, castrated or caponized, without anesthetic, for convenience or luxury, and there is no law against it. In fact, these farming operations are expressly permitted, in this language, by the law. But the surgeon with a delicate and perhaps new operation to perform may not perfect his technique by doing it first on an animal, even under complete anesthesia. No drug may be tested, by administering it to an animal, first. No serum, to protect children against diphtheria, or even to protect other animals against anthrax or hog cholera, can be manufactured or tested.

A human being bitten by a mad dog must die of hydrophobia since the only known treatment involves inflicting a needle-prick on a rabbit, and this is forbidden. The botulinus investigations, without which the California fruit-canning industry would be ruined, are forbidden. It is forbidden to investigate the poisoning of orchard pests or their extermination by their natural enemies, or even to make experimental investigation of the diseases of plants. Present methods of combating anthrax and hog cholera are made penal offenses and the treatment of diphtheria, lockjaw and meningitis by the methods approved by modern science are forbidden. The teaching of medicine, physiology and biology in the universities of California is made impossible. And a thousand other things, equally absurd.

And all this, not to protect animals from pain—since animal experimentation is prohibited even when there is no pain, while the infliction of pain is permitted, if it is for other purposes—but to prevent scientific investigation.

The thing is almost unthinkably preposterous. No such law exists or has ever been seriously proposed in any civilized country. And yet there will be a real crusade for it, by people who think they are sincere, in California.—Chester Rowell, in *S. F. Bulletin.*

WHAT IS CHIROPRACTIC?

What is Chiropractic?

The Grand Gazaboo of the *Fountain Head News*, the official publication of the Palmer aggregation at Davenport, Iowa, knows. He says so in a recent issue of his organ.

After frantically flagging the reader's attention under the caption of "Chiropractic Will Some Day Come Into Its Own," he boldly and fearlessly interrogates himself: "What is Chiropractic?" Just like that.

"That is a question of vision," he asserts with utmost haste.

"Here are some of the possible answers:

1. It's a good graft.
2. It's an easy way of making a soft living.
3. It's a method of adjusting backbones to extract money from the sick.
4. It's a method of adjusting the subluxations of the backbone.
5. It's a method of adjusting the subluxations of the backbone as a cause of diseases.
6. It's a philosophy, science and art of things natural and the restoration of the same when absent.
7. It's a philosophy, science and art of things natural the adjustment of the vertebral subluxation of the vertebrae, by hand, for the purpose of releasing the imprisoned mental impulse, that health may be restored to the diseased part."

"And so," he decides after the illuminating definition, "its usefulness would be but a question of interpretation of your vision to service to those needing it."

Ho! Yum-m-m. What's the football score?—*O. S. M. J.*, Nov., 1922.

THE CHOICE IS BETWEEN DEATH FOR GUINEA PIGS OR HUMAN BEINGS

The *Saturday Evening Post*, October 28, in an article on the anti-vivisection bill submitted to the voters of Colorado November 7 under the caption, "Guinea Pigs or Children," says:

The people of Colorado will next month accept or

reject by popular vote a so-called anti-vivisection bill that is so sweeping in its provision that its passage would apparently make it unlawful to test cows for tuberculosis, to vaccinate against smallpox or typhoid fever or to conduct any form of medical experimentation upon animals either with or without the use of anesthetics. If this backward-looking measure becomes law the manufacture of vaccines and antitoxins in the state of Colorado will become a penal offense. Chemists can actually be fined and sent to jail for making the surest known cure for diphtheria or the most certain preventive of smallpox, and any medical research that involves the inconvenience of a single guinea pig will put a scientist behind the bars.

The anti-vivisectionists long ago had their day in the court of public opinion. Their case had a fair hearing and it was not thrown out until it was clearly shown that much of their evidence was false, much of their reasoning fatuous and unsound. On the other hand the immeasurable value of animal experimentation is every day being demonstrated with evidence that is more and more overwhelming. It is even whispered in medical circles that the conquest of cancer will soon be an accomplished fact. In the meantime every farmer's boy knows that the control of hog cholera, anthrax and other animal diseases—made possible by animal experimentation—each year prevents far more suffering in brute creation than was ever inflicted upon it by the whole tribe of callous investigators that became extinct nearly a century ago.

And yet, there are many honest and convinced anti-vivisectionists. There are those who can visualize with unfeigned horror the experiences of a guina pig in a biological laboratory, and who will pour out their pity upon it instead of upon the children that gasp and strangle in the clutches of diphtheria. They cannot perceive that possibly Providence put that guinea pig in the world so that by its death it might give back life to some suffering morsel of humanity. And yet that is what guinea pigs are doing every day.

The issue is plain enough. The choice is between death for guinea pigs or for human beings.

Note: Since the above was written, October 28, the people of Colorado voted on the proposition. It was defeated by a vote of over 5 to 1. The contest has been well fought and the people of Colorado, especially the medical profession, are entitled to congratulations and the gratitude of the nation on the victory they have won on behalf of science and the welfare of mankind and of domestic animals.

Correspondence

INFECTIOUS JAUNDICE

New Haven, Conn., Nov. 24, 1922.

To the Editor:

The undersigned is desirous of obtaining information regarding the prevalence of Infectious Jaundice in your State.

The disease is non-reportable and information regarding its prevalence cannot therefore be obtained from Boards of Health.

I shall be grateful for any reports of outbreaks which your readers may care to send me.

GEORGE BLUMER, M. D.

ACTINOMICOSIS

To the Editor:

I am endeavoring to make a complete study of the distribution of human actinomycosis in this country. The number of cases reported in the literature is surprisingly small, and I know that the disease is not so rare as is sometimes thought. I shall greatly appreciate hearing directly from any one who has had experience with this disease, and desire to know concerning case histories the following: age, sex, occupation, residence, state in which the disease was contracted, location of lesion, duration of symptoms, and any special points of interest connected with the treatment, outcome of the disease, or necropsy findings.

A. H. SANFORD, M. D., Mayo Clinic,
Rochester, Minnesota.

THE MONKEY GLANDS

By ROY K. MOULTON in the *N. Y. Evening Mail*

I keepa da monk and I playa da org
And I maka da plenty mon.
Da monk do da dance and passa da cup
And maka da keeds da fun.
Witouta da monk, I make no biz
And panic will come intsead.
Oh, what will become of Italian boy
When all of da monks ees dead?
Eet maka me sick by da heart to know
They cuta da monk for glands,
And they will be after my monk, too.
Dees ees a helova lands.

Oh, why not they carve up da hippopot,
That mountains of flesh and bone,
Da lion, da snake or da elephant,
And leave-a da monk alone?
Da times will not be what they used to is
Withouta no monk and cup;
Oh, why not they carve up da poodle-dog
Or some other reech man's pup?
My heart, she ees very sad today,
No song by da night I sung.
Oh, why should thy keela my leetle friend
To maka da old man young?

Original Articles

MULTIPLEX PATHOLOGY AND THE CANCER PROBLEM*

WILLIAM SEAMAN BAINBRIDGE,
Sc. D., M. D., C. M.

NEW YORK CITY

From many quarters today we hear the statement that cancer is greatly on the increase and that, in spite of the large number of research centers established and the trained workers who are bending their efforts towards solving the problem, little, if anything, has been accomplished in the way of solution. There is a general expression of pessimism among the profession, as well as among the laity,—a feeling that during all the centuries since Hippocrates wrote his treatise on the subject (400 B. C.), no real progress has been made in discovering any basic facts about cancer.

At this time, when the utter hopelessness of the situation appears to have gripped the minds of many, it seems wise to pause and deliberately face the issues as they are. Is it true that the cancer problem is wrapped in the same obscurity as in the period when Cato employed charcoal for the disease (200 B. C.) or even later when Galen (200 A. D.) expounded his theory that all cancer was caused by the concentration of "black bile"? From the writer's point of view, the facts do not warrant this attitude of despair —this universal pessimism on the part of the laity or the profession.

The first mention of cancer appears in the papyrus Ebers, the oldest extant book on medicine—an Egyptian treatise of about 1500 B. C. Hippocrates frequently mentions cancer in his Aphorisms, even going so far as to distinguish between hard and open cancers. The ancient Romans used the terms "Cancer" and "Carcinoma", but as late as the period of Celsus (30 B. C.) the term was applied to all "swellings", regardless of the site or origin. In the seventh book of his De Medicina, Celsus differentiates between cancer and certain non-malignant tumors. He was familiar with cancer of the liver and spleen, as well as mammary carcinoma and in the excision of breast cancer, he advised against the removal of the pectoralis major, though without giving an adequate reason.

However, in spite of a general recognition of cancer, the term was rather loosely applied, for we find that as late as the eleventh and twelfth centuries, a number of writers were by no means clear as to what was meant by cancer, and Borgagnoni, in describing cancerous conditions, mentions cancer of the uterus and breast and *elephantiasis* under one head. In the fifteenth century, cancer was used as an inclusive term for a number of diseases—many of which had nothing in common with cancer. The identity of *elephantiasis* and cancer persisted for a long time and was still prevalent in the seventeenth century.

True leprosy was considered identical with cancer and was finally separated from it by Helmont in 1644. The chief point of difference was, according to Helmont, "the extreme painfulness of cancer as compared with the indolent behavior of leprosy." Of course, we know today that "painfulness" does not hold true except in very advanced conditions of cancer.

Dr. J. Dyneley Prince, in his "Notes on Leprosy in the Old Testament" says that in Lev. 13 and 14 the Hebrew term used was one that simply denoted a skin disease, the sufferers from which were "tabu" according to the Hebrew Code, and that common tradition has translated this term as "leprosy" (meaning elephantiasis Graecorum). The true "leprosy" meaning of the term is now doubted by very high authority.

Prof. Morris Jastrow, Jr., in his treatise "So-called Leprous Laws of the Old Testament" makes the statement "That the Hebrew term was never intended as a designation of leprosy is now so generally conceded as to require no further discussion," and, moreover, "if the disease had been known, it would certainly have been enumerated among the diseases threatened as curses in Deut. 28:27 where it is not mentioned." However, Dr. Prince thinks that if the "athnah" of Deut. 28:27 is omitted, the text may be rendered: "the scabies of which thou canst not be cured." He adds: "The entire subject . . . is beclouded by much uncertainty . . . but one is tempted to think that the Hebrew term, even if it did not denote *exclusively* what we know as leprosy, at least included the dread disease and, while the term could be and

*Read before the Tri-State District Medical Association, at Peoria, Oct. 30, 1922.

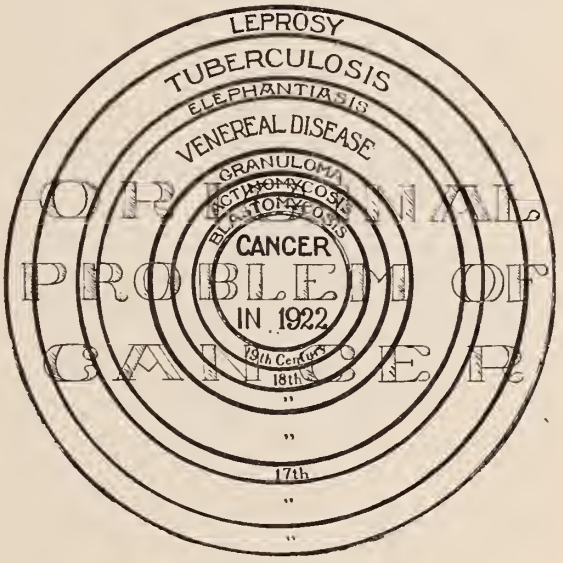
possibly was used at a late date for other eruptive maladies, it was also used to denote leprosy itself." Dr. Prince goes on to say that "in studying Old Testament descriptions of the disease, there are two types—the tuberculous or pustulating phenomenon, and the anesthetic variety." "In the first stages, leprosy may be mistaken for at least seven unrelated diseases, among which may be included lupus, syphilis and multiple sarcoma," Dr. Prince adds. Dr. D. W. Montgomery in "Illustrations of the History of Leprosy" states "that the hazy ideas of the middle ages (regarding leprosy) persisted until the end of the eighteenth century."

Throughout Europe much confusion prevailed in regard to pathological processes as late as the eighteenth century, and many learned physicians still considered *syphilis* identical with cancer. Near the end of this century, Peter Bierchen, a Swedish author, published a monograph in which he emphasized the difference between scrofula, lues and cancer. A clear clinical differentiation was made by him between cancer and lues and he pointed out that *mercury* would cure this latter condition.

Wilmer, a surgeon of Coventry, England, who wrote "Cases and Remarks in Surgery" (1799) reports a case, which he calls "A Cancerous Disease of the Mouth Successfully Treated," but which cleared up under the administration of *mercury*. Wilmer says: "Mrs. E., at the end of the year 1769, perceived a small swelling within her upper lip. Some little time after its first appearance it was attended with pains, shooting over the roof of the mouth towards the throat. At the expiration of two years . . . she was supposed to be incurable by the gentleman who attended her. In this situation, she came to Coventry in June, 1772. I found her then emaciated, with hectic fever, the disease had spread into her throat, her upper lips and gums were almost destroyed and the parts around the sore were indurated and tumorfied." Wilmer states "that he gave her a half grain of *mercurius* corrosivus sublimatus twice a day: and amendment was visible every day: in less than a month the indurated sides of the sore softened: the cavity lessened and the pains were almost gone." He adds "On the eighteenth of September, 1772, Mrs. E. returned to Warwick, perfectly well and has not experienced the least return of the disease."

Nearly one hundred years later, T. W. Bright in his book, "Cancer: Its Classification and Remedies," stated "that in the opinion of some writers, from whom he begged to differ, *tubercule,* or *consumption,* scrofula and *cancer* were only varieties of the same disease."

In 1803, William Hey, in his writings, separated many of the malignant from the non-malignant neoplasms. Hey was followed by Wardrop, Pott, Astley Cooper and others, all of whom did much to lessen the chaos in pathological classification, but even so there were some diseases included in the term "Cancer"



which had no relation to it. The literature of the last 150 years bears evidence to the marked progress which has been made in separating such diseases as blastomycosis, tuberculosis, actinomycosis and syphilis from cancer and to the fact that these conditions are now recognized as entities and treated as such. Thus historically considered, "Cancer", as understood from century to century, is on the decrease.

There are the authorities, today, who believe that one type of malignant disease is on the increase and another is on the decrease. There are those also who believe that all malignant disease is on the increase. Whether this seeming increase can be accounted for on the ground of improved clinical diagnosis, the greater number of autopsies, improved certification of causes of

death and the fact that, today, people attain to greater age, is still a mooted question. "Cancer", as understood by the ancients, is not the "cancer" of today. Will the "cancer" of today be that of tomorrow? That history repeats itself is a self evident fact and it would seem a logical assumption that this cancer mass which has been pathologically divided should be so divided again.

We realize that clinically there is a vast difference in the aspects of cancer, even in those malignant growths which have the same cellular formation under the microscope. The varieties of clinical characteristics in this cancer mass and the degrees of virulence frequently found in growths of apparently the same nature, would seem to indicate that cancer is not one, but a group of diseases. There are types so diversified—so far removed from one another clinically that it is much easier to conceive of them as separate entities than as parts of a composite mass. There are the cases in which the disease may be of long or short duration, though the microscopic findings are the same, and also the instances where the pathological analyses are identical, yet in one patient the malignant process will recur, while another will be permanently free from recurrence.

The writer has selected the following series of histories, from his office files, to illustrate the clinical and pathological differentiations which seem to bear evidence to the fact that cancer, as we know it today, is of multiplex pathology. The cases are not reported in full—only such points as seem relative to the multiplex pathological view of cancer are recorded. The laboratory analyses, in all the cases, were made by pathologists of recognized standing.

Illustration of the rapid growth and metastasis following the incision of a small neoplasm of the lower lip.

1. T. W., male, 48 years of age.

Subsequent to the excision of a small epithelioma of the lip, at the site of holding cigar, there was rapid and extensive involvement of the glands of the neck and in less than six months from the removal of the growth, the patient died from metastasis.

2. M. O. C., female, 73 years of age.

This is a case of epitheliona of the left cheek originating upon the site of a burn from a match. A scar resulted from the burn. This scar the patient scratched and as a result of the irritation an ulcer formed. There was a gradual growth from the epithelioma until the end of twelve years the disease had reached such proportions as to prove irremovable and the patient died of exhaustion.

From the laboratory standpoint, these growths were of the same nature, yet clinically so markedly different. In the latter case, the patient remained free from metastasis during the extended course of the disease.

3. M. F., 30 years of age, married, two children.

May 5, 1911, a spot, the size of the head of a lead pencil, was removed from just below the inner canthus of the left eye. May 16, 1911, a second operation was performed for local recurrence. One month later, the entire contents of the orbit, together with the periosteum, were removed. On July 7, another operation was performed for further removal of the recurrent mass, which now involved the walls of the orbit, the base of the nose and the right upper jaw.

On July 19, 1911, the patient gave birth to a healthy child. On August 17, the mother died of exhaustion, the sarcoma evidently involving the brain in its rapid recurrence and extension. At the time of the first two operations, the patient was advised to permit the termination of the pregnancy, but this was refused on religious grounds. (It is the belief of excellent authorities that pregnant blood in cancer increases the rapidity of extension in the host and fully justifies the termination of the pregnancy in the interests of the mother.)

From the dates given it will be seen with what frightful rapidity and extension recurrence took place and that the recurrence seemed to be commensurate with the progress of the pregnancy.

4. O. A., female, 8 years of age.

This patient had fifteen operations for multiple sarcoma, the primary growth being a deep one of the ankle. After a short period of freedom from recurrence, a number of lumps appeared in the child's side and others on the abdominal wall. Some were removed and the others kept under close observation, but there seemed to be no increase in size.

In the twenty years since the appearance of these growths, the patient has married and borne a child, but even during the period of pregnancy the disease evidently remained quiescent.

This case is in contradistinction to the one (3) in which the sarcoma seemed closely related to the progress of the pregnancy. The two cases were practically identical, the microscopic findings in both being the same.

5. H. S., male, 18 months of age.

Shortly after birth a small elevated neoplasm appeared near the inner canthus of the left eye. It grew rapidly, projecting over and completely obstructing the eye.

The mass was removed in toto April, 1908, and the pathological report confirmed the clinical diagnosis of sarcoma. During the 14 years since the operation, there has been no recurrence.

6. R. R., female, 5 years of age.

According to the history obtained from the

mother, the family physician excised a small red spot, size of the head of a lead pencil, from this child's face, just above the vermilion border of the upper lip. There was a recurrence within a few weeks. Seven months from the removal of this local recurrence, there was an enormous growth—the size of a large grapefruit—involving all one side of the face, from the forehead to the chin, and completely obstructing the eye. Within one year from the appearance of the primary lesion, the disease had proved fatal.

The four cases of sarcoma reported above were pathologically the same disease, but how markedly different in their progress and result!

7. L. K., male, 56 years of age.

This patient developed a small growth near the umbilious, which was excised and proved upon examination to be carcinoma. Within a few weeks of the removal of the *superficial* growth, the carcinoma recurred and within a short time the patient died of metastasis of the liver.

8. J. H., male, 48 years of age: married.

Laparotomy was performed and carcinoma was found extending along the anterior wall of the stomach and including the greater curvature near the pylorus. The ascending and tranverse colon were largely fused. A posterior gastroenterostomy was performed, but the condition of the patient did not warrant the removal of the growth.

After two months of forced feeding, a second operation was performed. Three quarters of the stomach, the upper half of the duodenum, almost to the papule of Vater, with a portion of the head of the pancreas and the large lymphatic glands in the neighborhood of the common duct were removed. The pathological report was "Carcinoma'.'

Contrary to all expectations, the patient completely recovered and in the twelve years since the operation, there has been no recurrence.*

From the standpoint of the pathologist, both of the preceding cases were carcinoma, yet there was rapid metastasis from the small, superficial growth, while the deep and extensive carcinoma showed no recurrence.

The writer could go on citing innumerable cases such as these recorded—cases microscopically the same, yet absolutely different in course and outcome, so different that it seems reasonable to believe them unrelated. There is the epithelioma of *fifteen years duration* and the epithelioma which proves fatal *in six months:* the *superficial* carcinoma which kills in a short time and the *deep* carcinoma, after the removal of which the patient remains permanently free of the disease: the *small* sarcoma which causes *metastasis* in a few weeks and the *extensive* sarcoma where the patient is free from recurrence. Pathologically, these are the same, yet clinically how much more indicative of a multiplex pathology than parts of a composite mass. If all these are variations of the same disease, then there must be other potent factors, unknown to us, underlying the malignant process acting within the host.

The accompanying chart is schematic. Its basic purpose is to show that at one time in the history of medical science all of the diseases included here—and apparently others not included—were considered part of the cancer problem and that only by centuries of concentrated effort have we been able to differentiate between the parts of this vast cancer mass.

To claim that cancer is terribly on the increase and that we are no nearer a solution of the problem than we were centuries ago is not justified by the facts.

The exact anatomical study of cancer and the histological and clinical observations of the last fifty years have pointed the way for modern cancer research.

Cancer Research Laboratories have been established to study malignant disease and to test the "Cancer Cures" which appear from time to time. Many of these so-called cancer antidotes have required months and even years of study in order to prove the negative possibilities of the treatment.

The general public is being instructed in the danger signals of cancer, and to seek medical advice as soon as these signals appear.

The profession has learned by experience to eliminate chronic irritations which tend to create precancerous conditions, as well as many of the early manifestations of malignant disease. It has learned too that manipulation of cancer bearing tissue tends to spread the disease, via the lymphatic channels, and that biopsy, for the purpose of pathological diagnosis must be most carefully performed, and the patient safeguarded.

Surgery has proved that for the inoperable conditions there are, in many cases, palliative methods, such as the lymphatic block, starvation ligature, relief of obstruction of the hollow viscera and the severance of nerves to relieve pain.

For the superficial growth, the x-ray, radium and the use of light and heat, in various forms, are being employed before, during and after

*Reported in full, Archives Médicales Belges, May, 1921.

operations, but there are as yet, we must admit, varying opinions concerning the results obtained.

Earlier diagnoses are being made and many cases are seen at the precancerous stage: other conditions, which at one time would have been called cancer, are no longer diagnosed as such.

The public is being educated to the knowledge that timely and adequate surgery—balanced surgery—is the only method which, as a rule, will thoroughly eliminate cancer. However, we must admit, that surgery at best does not solve the problem but remains our mainstay until we evolve something more adequate.

In closing, the writer wishes to emphasize the probability that cancer is of multiplex pathology. The clinician or laboratory worker who believes he has discovered the cause of cancer, should not be discouraged in his efforts if it is proved that his hypothesis does not encompass the entire field of cancer causation. It may be that his effort will result in eliminating but one factor from this cancer mass—a factor which may, in no way, be related to the elements remaining in the entity. Progress has been made and will be made in this campaign against cancer. This is no age for pessimism, but a time when we should cultivate optimism and redouble our efforts in behalf of humanity and the ultimate solution of the cancer problem.

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HOW CAN A STATE MEDICAL JOURNAL BEST SERVE ITS READERS?*

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State Medical Journals carry a vital and composite trust to conserve and to execute. Upon the honest and capable functioning of these periodicals hinges the healthy future of the medical profession. Failure on the part of the state medical journals to exercise their prerogatives and to discharge their duties results in a debacle of directive similar to that which would occur in a tangle of railroad terminal tracks if the general semaphore or signal system should be stricken with paralysis or sudden delirium.

The world's civilization reels with the chaos of war's aftermath. Surely the economic scheme of the nations finds the stubble field of reconstruction so thorny a path to tread that sanity of purpose must find some place and somewhere, a cell-structure of normality, to which it may cling and grow. If, from the tenets and works of the medical profession, such a rational equilibrant is absent, where, may it be asked, is a suffering world expected to find this key-note of normalcy?

It was too much to hope that medicine might escape completely any degree of contamination from the epidemic of confusion that has the world by the ears. Plague spots were to have been expected and have appeared in our midst —literally eating into our vitals. But it was only right to believe that the underlying strength of ethical medicine—veritably a "sword of righteousness" would arise and slay false prophets and the heralds of disorder and disarray. But when the sword is poisoned in the scabbard, what remains? Nothing! Absolutely nothing. And at the very outset of the question as to "How best a state medical journal can serve its readers?" the statements must be made with emphasis.

A state medical journal serves best the interests of its readers when it keeps the faith of tradition and precedent.

A state medical journal serves best the interests of its readers when it refuses to betray its constitutency into the hands of the enemy.

A state medical journal serves best the interests of its readers when it uncovers the traitors within its ranks.

There is nothing inferential in these statements. Exactly what is meant by the least of these will be made plain in what is to follow. For right now the state medical journals have on their hands a problem that is the keystone of the salvation of medicine from the pestilential pit into which the profession is being driven by an ever strengthening attempt at centralized control.

And what centralized control has under its hat as a corporate body, half the doctors in this country will not know until they find themselves bludgeoned over the head with the goldbricks produced by "welfarers" for meddling laymen and political wire pullers.

Mutual duties of the state medical journals and of the profession permit definitions of exactitude. The state medical journal as a part and

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as a unit, must teach, warn, guide and above all, protect the interests of the profession upon which it waits, and the principles of that democracy under the workings of which, medicine has attained its heights of greatest freedom. Look at what state medicine and compulsory health insurance have wreaked upon medicine in Germany and England and stand appalled. If the state medical journals fail to function along their natural lines then the science of medicine and its organs stand as a house divided against itself. That bureaucracy from which the pilgrim fathers fled is already more than a cloud—and a funnel-shaped nebula at that—all along the horizon.

Hence, within the last decade has arisen a new and ominous task for every self-respecting and professionally loyal medical journal. I repeat, this is the battle against centralized control, a hydra-headed viper in the bottomless pit wherein the medical profession is being plunged by false leaders with the piteousness of sheep led to the slaughter.

Piteous indeed is the plight of a medical journal that has fallen into outcast ways and has become merely the subservient, ignorant tool of those who would play the macquereau with the science of medicine itself, debasing and degrading both the present and future of this vital profession to serve their own temporary material profits. Think of it—the mouthpiece of a great science reduced to the level of a mere phonograph for the broadcasting of various "loaded" and equivocal "reports" of "picked" committee "stunts" that prove the false and betray the true! Dangerous "press agentry" for pocket-filling job-begetting whims of sections of medical organization officialdom.

That some journals are unconscious of this subservience to gag rule makes the condition not one whit less shameful. The editor of a state journal should have his ears and eyes wide open and should possess such a clear perspective of all that goes on about him, that, in the words of the street gamins, "Nobody is going to be able to put anything over on him."

Let it be repeated again that unless an editor is keenly alert in these respects, and free from all subsidization either from elsewhere or from his own subconscious greed for either empty honors or political power, or hard cold cash, his journal is going to fall down hard with a speedy descent from what is honorable and just. Individual members of a state society must sit up, take notice and interest themselves in the journal of their organization to such an extent that they will not only know what this journal is standing for, what it decries and what is or is not its editorial discretionary power that it will be impossible for any editorial appointee to cast himself at the feet of interests that exploit themselves and their personal profits at the expense of their brothers in medicine.

Much material appearing month by month in some journals is merely sugar-coated poison where the profession is concerned. For this material is disguised, camouflaged, hidden propaganda for the promotion of deceits and fallacies with which a portion of medical officialdom is connected. These artifices on their parts might be excusable if the propaganda sent out gave even a half-way fair deal to both sides of the questions under discussion. Instead of getting down to facts and setting forth simple evaluations of theories and practical experiments these "reports" make the vicious error of insisting that the "part" is the "whole" and citing the casual opinions of "ten medical men and a couple of lawyers" as the opinion resultant from a carefully deliberated ballot cast by the medical profession from one end of the United States to the other and with every saddlebag doctor in on the game as well as the polished mahogany welfare men. All along the shrewd scheme has been to mull up a "committee report" with plenty of titles and long sounding names, fill it with "findings," decisions and substantiations and "feed it out" to some drowsy, or overly innocent medical journal that unsuspectingly enough would swallow whole, this very flattering advance from a supposedly distinguished and thoroughly altruistic body of men. Printed as a consensus of medical opinion for circulation among the public, the profession, the medical and the "lay press" this "doctored" literature coming from men who should guard their professional brothers, rather than sell them into bondage has proven to be veritably the "poison in the scabbard." *And now when the time comes to fight, we men who must draw the sword to fight the good fight for the honor of our profession and the lives and the health of the human race from the venom spots from point to hilt of the weapon in which we had placed our faith!*

Is this what we have had a right to expect

from our medical press? No! Yet it takes a brave man to step out and tear away the shield and expose the noisomeness to the light of day. And that is exactly what has been done by Dr. Volk, Congressman from New York, who exposed one of these fake "consensus of medical opinion" that had come from the Council on Health, and perhaps though I wish to avoid personalities,— from time to time from some of the officers of the A. M. A.

And there are plenty more exposes in line. Already the political traffic has begun in the "sacredness of maternity"—a stunt put over by the Sheppard-Towner Maternity Bill before five per cent. of the doctors in this country knew what was happening, and it is safe to say that so far as some of the medical journals are concerned, there are not more than forty per cent. of the doctors who know about it now. Just what the Sheppard-Towner Maternity act is going to mean before it gets through, is enough to appall anybody but a numbskull. Statistics about pregnancy will soon be as available as the federal reports on boll weevil, the comparative efficiency of Rhode Island Red roosters as parallelled by Black Langshan, and undoubtedly as thorough as those of the reports on the wheat crop. Did the actual or real mothers of this country demand that nefarious piece of legislation? Did the physicians? No, to both of these questions! Then who did? A bunch of job-makers and "welfarers" who were out hunting soft jobs for themselves and out founding a silk-lined medical nepotism. Yet, if you want to know the medical journals that fought or that countenanced by not fighting this revolting piece of legislation, go out and buy a few back numbers and learn the history of this outrageous treachery.

Abstract medical thought finds concrete expression in that clearing house for ideas afforded through the columns of professional publications. What outcries would arise, what shouts of malpractice echo from Maine to California, and from Florida to Alaska if any reputable medical journal gave the approbation of its paper and type to articles advising the removal of healthy eyes, the lopping off of normal hands from the absolutely well man, or advocating hysterectomies from women with nothing in the world wrong with them except large bank accounts and too much spare time.

Yet, even greater crimes than these are being committed daily against the science of medicine and the men who are its practitioners. Already heinous mayhem has been perpetrated against the mother profession by debased, misguided, cheaply-bought profiteers among her sons, and the worst is not yet. Look at what has been done to medicine by the stool pigeons of the men who have foisted upon us such legislation as the Harrison law, the medical restrictions in the Volstead law, the attempted creation of Compulsory Health Insurance laws and that pandering wolf in sheep's clothing—the Sheppard-Towner Maternity Act. This Maternity Act caught the profession napping with a vengeance for only one state in the Union had the foresight to scent the fraud, to meet, to pass resolutions against this nefarious measure and to send an official representative down to Washington to fight the error and the absolute filth of this monster born of selfishness, greed and treachery.

The duty of state medical journals from one end of these United States to the other was to have come out flat-footed and plain and to have told the truth about this joker at the expense of a nation's womanhood and a nation's homes and made charts, if necessary to pound into the heads of a profession slothful to its own interests and its own duties to the human race, the ground glass in the milk of the cocoanut placed there for the destruction of the rank and file of medical men by a select group of theorists, suffering from astigmatism when it comes to looking squarely at anybody's interests but their own temporary and vainglorious ones. Unfortunately some of the state medical journals cannot plead innocence of subsidization unless they plead guilty of ignorance. And surely ignorance is excuse enough for either suppression of the journal or removal of its editor.

Unless drastic action of this sort is taken in more than one part of the country before many months have passed there will appear in the statute books even more freak laws, the purport of which will be to impair the usefulness of the practitioner and to impose hardships and suffering upon the sick and disabled. It is time that medical men protect and show to the public the nefarious and race destructive tendencies of inhibitions against medical practice now made laws of this United States by meddling politicians and cranks. The state of affairs now

dominant would never have been attained if medical editors of the country kept alert to the exegencies of their jobs and if the medical societies of every county, in every state in the nation were conducted as they should be and as they would be if the officers of medical societies in general were more specifically alive to their responsibilities and exercised the influence of which they are capable. For a pertinent illustration look at what Union labor has done for the rank and file of the membership of this organization. And you can stake your last dollar on it that the union labor men knew a great deal more about what their officers are doing and the legislation that is being put on the statute books than the doctors of this country even dream of, when it comes to their end of things.

Because of this somnolence on the part of the profession that must be the bulwark of the citizenry what pests pursue the profession at the current hour, and demand annihilation if medicine as a progressive science will survive?

Outside of the tendency to bureaucracy that throttles in red tape all progress as successfully as the swarming Lilliputions tied the wanderer Gulliver hand and foot, and the flood of paternalism that has deluged to the ultimate degree of danger the standards of conservatism and rational thought till decent men cry aloud for a second Noah and an Ark where lay control of medicine will be as the sins of Sodom and Gomorrah, let us make a brief recapitulation of the sources of the evils that breed the beginning of the end.

Generally speaking we may subdivide these origins of destructive attack into:

1. Overpaternalism, and
2. Burreucracy as just mentioned.
3. Vesting of too much discretionary power in officials.
4. State Medicine campaign.
5. Lay organizations and individuals uniting in attempts to supervise and control the practice of medicine.
6. Legislative Dictation of the Practice of Medicine.
7. Determination of Ignoramuses to nationalize physicians.
8. Compulsory Health Insurance beginnings.
9. The overtrained nurse, chafing at the bit like a bunch of colts just in from clover.

Am I unjust, do you whisper? Well listen to what the outlook for medicine is, as stated by Dr. George E. Vincent, president of the Rockefeller Research Bureau. Even as far back as in 1919, in writing in the *Charlotte Medical Journal* this learned gentleman delivered himself of a prophesy anent the future of medicine that is enough to make a keen man's blood run cold and send him off to buy a ticket to go to the South Sea Islands and live among the savages who are known as cannibals and do their man-eating openly and above board,—for, wrote Dr. Vincent: "Medicine in its broad sense is to be simply one of the co-operating bureaus of government." Proceeding, Dr. Vincent cites his vision, in which he sees the members of the profession as having lost all personal initiative; he views physicians and surgeons working a specified number of hours daily at a governmentally fixed price and having absolutely nothing to say as to which patients they shall attend, and also the patient deprived of all choice as to which physician shall treat their troubles.

In specific words, Dr. Vincent did not carry his logic to the end, but for these inevitable steps he advises physicians to prepare. And the bitterest degree is not far absent from the present day, when in the state of Wisconsin, a bill exists, that was passed by the state legislature and signed by the governor limiting to one dollar the charge that any physician could make for a prescription of a certain nature. A similar bill was introduced in Illinois. It failed to pass. It may come up again. And in this United States today there exists dictative legislation telling the medical profession the conditions under which certain remedies may be used and dosage proportions down to the routine sequence as to the intervals when it may be taken. This does not come from a National Board of medical advisers, either, but rather from a few laymen and a few more medico-politico-legal lights. Recently in the State of New York, an attempt was made to smuggle through a bill that would deny physicians discretionary power in the administration of some of the most valuable remedies in the pharmacopoeia, and it is reported that a similar attempt was being made in Congress. Since this has been done, it would be rash to say that anything else is too preposterous or too outrageous to be enacted—even the attempt last year in a

western city for a judge on a bench to castrate a husband or to sterilize the wife because they were poor and had more children that the municipality found convenient. Public indignation was aroused in this instance and it just shows what can be done when the truth of the matter gets out. The "welfarers" were having it all their own way until the wife in the case made a protest and get her protest heard. She was a poor woman but she stuck to her rights according to the time-honored tale of the scrubwoman who insisted that "the poor has their pleasures as well as the rich."

Here is an illustrative incident of what might be accomplished for the profession if the need was met of a closer co-operation between doctors and medical editors. The practice of medicine by legislative dictation rather than by the discretion of the educated and responsible physicians should stop and the state medical journals and the doctors in those states should get together and have a definite understanding as to what is going to be done to save medicine as a science and not debauch it into a political playground. The county and city and state societies want to get together. A state medical journal must sit in and help the various organizations develop scientific programs for the various meetings; print accounts of these programs and pass along the experiences and discoveries that come daily to the man in practice just as they do to the man in the research laboratory, and put plainly into its columns abstracts of the world's literature on the progress of medicine. With this medical news gathering and digest at its best, the state medical journals need editors who are not so handicapped and hobbled that they are afraid to put into their editorial departments an absolutely fearless and honest presentation of anything and everything affecting the welfare of the doctor in his medico-political and economic interests. This department should provide advance and current information regarding all matters of state, inter-state and national legislation with advisory and constructive comment and the outlining of methods whereby such legislation can be passed or defeated according to its deserts. The editorial department of a state medical journal should provide the center for the activities of the legislative committee and act as the executive office for the state-wide legislative bureau. Illinois has a good plan for this. The state medical journal should represent the interests of its doctors and defend these against the machinations of medical politicians; should be a leading factor in the choice of delegates and in seeing to it that they serve the interests of their constituents.

And state medical journals can't do this unless they remain free and independent and are accountable only to the house of delegates of the state society. Unless this last plan is followed the state journals cannot assume an independent editorial attitude—the question of state rights, again, if you please—and in other words, the state medical journal should not be subsidized.

I repeat that the state journad has a right to stand up for state rights as against centralized control or bureaucracy whether within or without the lines. The domination of the profession should not come through the Journal of the A. M. A., but this organ should be responsive to the leadership of the state journals just as president of the United States even with his power of veto, can have his hand called by Congress. Acting along these lines and carrying out the analogy, whenever the official organ of the physicians fails to serve the interests of the rank and file, then with all speed the state medical journals should step out bravely and without fear of extinction, and call to time that same official organ.

Truly state medical journals have their hands full. They must safeguard the liberty of their mother profession just as the liberty of the press in America has aided in the defense of national principles. A gagged press is the first symbol of democracy's decadence. And what can happen to medicine under gag rule has already happened in Germany where under state medicine and compulsory health insurance not one single discovery of moment has come out of the country in over thirty years. Yet, before that Germany was at the pinnacle of medical success, just as now she is at the depths of medical decline working as its doctors do under a penal fee. What a task for the medical society meetings of the future to busy themselves disciplining physicians who accept more than the panel fee! Think of a conscientious doctor in America, doing as they have had to do in Germany under state medicine there of bringing a baby into the world for one visit, and of going back, or sending another doctor later, to deliver the placenta. And think of

American doctors having to panhandle their fellow practitioners in other countries as the profession in Austria is having to do right now because government control keeps a man's earnings down to what would amount to a monthly wage of about $4.39 in American money. Yet, that is what we are coming to with all of this economic unrest directed by the "uplifters" towards that line of least resistance—the medical profession. Bear in mind that by inherent training and long practice an honest physican is essentially an unselfish man, a visionary altruist if you will, and that politicians and these reactionary reformers are the most utterly selfish thieves that infest the earth. They are willing to steal health from babies, from the helpless old and the modesty of womankind from the childbirth bed.

If you think I exaggerate or rant, lend your ears to a bit of legal history that will show you just what the police power of the state can do when it comes to confiscation of your hospitals and the manning of these institutions with political appointees. Don't dream for a moment that this is impossible of accomplishment. For the Supreme Court of the United States upheld the decision of the Court of Appeals of New York in the Rent Law cases, thereby establishing Judge Pound's definition, "the legislative or *police power* is a dynamic fancy, vague and undefined in scope which takes private property or limits its use when great public needs require, uncontrolled by the capitalization, requirement of due process."

Digest that and then think of a few more things that have been brought to pass.

Note the injustice heaped upon the profession by the Harrison narcotic law in placing a tax of $450,000 per year upon the profession for protecting the public. As the law is a public health measure for the benefit of the public, why the public should pay, and not the doctor.

Observe also the disposition of legislators to curtail the powers of physicians and to establish fiat medical practice. Examples are this same Harrison law, proposed narcotic laws that have been attempted in New York; the Volstead Act; the three amendments that came up for referendum last year before the voters of California and Oregon and are up again this year and known as the anti-vivisection amendment, the anti-vaccination amendment; the chiropractic initiative. And in Wisconsin at the last session of the legislature bills were introduced which, if passed would qualify Christian Scientists, osteopaths and chiropractors to sign death certificates, prescribe medicine, run hospitals, and have representation upon the staffs of these institutions; and that would have placed Christian Scientists upon an equal footing with surgeons in relation to the Workmen's Compensation Act. If the bill had been passed, that was introduced at the last session of the legislature in Oregon and had been enacted, physicians in that state would now be compelled to write prescriptions in English, in triplicate and giving the name and address of the patient, a concise statement of the disease and the exact symptoms for which the prescription was given. Still another proposed bill provided for the microscopical examination for every appendix removed. Everywhere exists disposition to destroy the doctor's individuality by attempting to create legislation that will put the profession under the domination of lay people, and especially politicians, and to minimize the physician's discretionary dignity. The glaring, ever popping up examples of this include Compulsory Health Insurance legislation, state medicine, re-registration bills and in New York, the health centers bill, and farther west, The Chairman of the American Council on Health and Education's scheme for a hospital on every crossroads, supervised by laymen under the jurisdiction of the University of Michigan. Likewise an A. M. A. Trustee's scheme for "medicinizing socialization" which provides for hospitals everywhere, erected by public tax in every town, political subdivision, hamlet, town, county or city ward. This means state, county, town, hamlet owned hospitals and logically it means politically controlled, which means "State Medicine in Excelsis." Other straws showing the way in which the wind veers in this favorite indoor pastime of "swat the physician" by destroying individuality, is the practice of a certain hospital of having surgeons go by number instead of by name, and the bill prepared in a neighboring state and that is yet to be introduced attempting to standardize the fees of physicians and of surgeons. Who wants to be a doctor, anyway, when they all get through? And how many of us realize just how the tide is turning to suppress the science of

medicine, pivoting largely on this line of least resistance, because it is that.

Professional honor is a powerful anesthetic against the uplift's errant sex-urge that has to find expression some way or other and that has to break up something or die. The hysteria sweeping the country is nowhere more manifest than in the miscalled welfare legislation seeking to exploit the medical and allied professions as the lines of least resistance and doing so with the well defined movement all over the United States to impose too many restrictions in the practice of medicine from the venereal disease clinic all along the way to the prohibitions about the use of alcohol and narcotics down to that revolting maternity bill.

Of course a part of the trouble is that people have forgotten now to attend to their own concerns. "Mind your own business" is a submerged law of progress and this has been superseded by a craze for uniformity—a lingering dreg of the time when we all went into uniform. With all due respect to the khaki let us recall Brig. Gen. Dawes' comment to Congress when he was put upon the carpet for cutting the red tape: "Hell Maria," cried the general, giving his respects to the ladies, "I wasn't sent to France to write out reports, I was sent to help win a war!" Medicine has been getting along pretty well without interference by the people. So long as politics and laymen let medicine alone, the science here in America has advanced until the medical service received by the citizenry of the United States is the envy of the world. Of course, it is upon the most glowing peach that the worms love to feed. Hence, no doubt there is some excuse for the greedy slugs to land on medicine as a square meal for politics. We have become infested, too, with the fault of foreign lands, bewailed by Goethe as "There are so few voices and so many echoes."

Out of America's industrial progress has arisen an obsession for a peculiar but noteworthy development. This is the zeal with which machinery is designed and built, ostensibly to serve various public interests and undertakings but in reality to cotnrol them. Remember the fable of the camel, the sandstorm and the tent. Perhaps in no other way than this is the decline of faith in liberty so clearly marked. In no phase of human endeavor is this menace to liberty more clearly shown than in the trend to waylay medicine. In no instance in this connection is it shown more easily than in the Sheppard-Towner Maternity Act. People forget, it seems, the axiom that the best government is governed least. An academic wit has defined "good administration" as the "doing extremely well that which should not be done at all." If this clever phrase is to be applied to the administration of medical practice, it should be adapted so as to read, "the extremely ill-doing of that which should never have been done at all." For public administration of medicine, the same as the public administration of anything—administration by collective authority—is almost uniformly inefficient and for an obvious reason. In such case artificial choice replaces natural selection in the designation of agents, and since nature is wiser than man, particularly political man, efficiency at once declines. In the United States, we are, in flat defiance of all our proclaimed principles and ideals, building a series of medical and other bureaucracies that will put to shame the Czars of the Russias when in the heydey of their glory. We are surrounded by agents, special agents, inspectors and spies and the people are called upon to suport through their taxes in harmful and un-American activities, whole armies of individuals who should be engaged in productive industry. When anything appears to go wrong or when any desirable movement seems to lag, a cry goes up for the creation of some new board or commission and for the appropriation of public funds to maintain it in reasonable comfort. And an infinite number of blank forms must be filled and an infinite number of records must be kept, classified, and audited at steadily mounting cost. The late war educated the people to the possibility of a host of schemes that might be utilized in order to procurse juicy jobs for uplifters. So such schemes have followed in rapid succession—all urged with a certain amount of plausibility and with an appeal to kindly sentiment, usually supported by vigorous propaganda, and zealous paid agents. Too many persons are engaged in supervising, in inspecting, and in recording the work of other persons. There is too much machinery and in consequence a steady temptation to lay more stress upon the form of practice than upon its thoroughness. Statistics displace practice. There are in addition, too many laws, and too precise laws, and not enough opportunity for those mistakes and failures, due to individual

initiative and experiment that are the foundation for great and lasting success. It is quite apparent that there is an attempt being made to bureaucratize and to bring into uniformity under lay dictation the medical care of the people of the United States while making the most solemn assurance that nothing of this kind is intended. The glory and success of medicine in America are due to its freedom; to its reflection of the needs and ambitions and capacities of the medical profession, itself under no federal authority. Nor under bureaucratic control would medical achievements and service be at all comparable with what has been reached under the free and natural system that has grown up among us. If tax supported medical practice be first encouraged and inspected, and then, little by little, completely controlled, by a bureaucracy in Washington, German experience will show what will happen. According to Dr. E. H. Ochsner of Chicago, one of the greatest authorities on medical economics, the German people, under Compulsory Health Insurance Laws, and state operated machine and medical practice, receive the worst medical service in the world—and I repeat that in over thirty years, no single new medical discovery has come out of Germany, whereas thirty years ago, as a free agent, medicine in Germany was at its pinnacle of power. Therefore to establish an army of bureaucrats in Washington, and another army of inspectors roaming at large throughout the land, will not only fail to accomplish any permanent improvement in the health and welfare of the people, but it will assist in effecting so great a revolution in the country as to one day endanger its perpetuity. The cost of such an experiment would be stupendous both in money, men and minds. The higher taxes, the loss of life due to an impaired service, and the lowering of professional morale. And the worst of it is that the major portion of the expense will be swallowed up in doing that which should not be done at all. The true path of advance in medical science is to be found in the direction of keeping the medical profession closely in touch with the people themselves. Let a man get a plaster for his own backache from his own doctor and not from the end of a piece of red tape.

If the day should ever arise, which, God forbid, when the people of the United States should allow their medical service to be supervised and administered from Washington—on that day efficient medical and surgical service will have come to an end. All the hopes that have been built upon efficient medical service for the future welfare and happiness of mankind will on that day be wrecked forever!

Tendencies towards such bureaucracies and the schemes and plots and counterplots of the men who foster them should be exposed ruthlessly to the public and to the profession. Men of medicine can not expect the lay press to take up the cudgels in their behalf when their own journals are not united in the fight, or if united in the fight playing false to the union by silence.

If a medical journal countenances the false doctrinaires that do them to death and play the harlot with the honors of the profession what can be expected of the lay press? Always the lay press will stand by the doctors if it has a chance. How is the lay press to know where treachery lies masked under the false authority of political officialdom?

Many a medical journal has been known to print the facts too late for the printing to do any good. If a bunco bill is about to be put through the legislature the doctors ought to have the facts, the news about that piece of legislation before it passes instead of afterwards. It is up to the medical journals to give their readers a map of the enemy's plan before the battle, and not afterwards when a ham-strung, handcuffed bunch of brothers in medicine wail, "if we had only known this thing was going to be done to us, God knows how we would have got out and fought!"

Now, the medical journals must make up their minds to give their readers facts about the medical news affecting medical men in time for the rank and file to express an opinion about it all, and to set about protecting themselves or render themselves liable of impeachment as being merely broadcasting stations for the faked up dope sent out with malice aforethought from an interested group. What is imminent duty for every editor of every state medical journal is to busy himself upon the main issues of his job and to cut out the side lines just about as quickly as he can. Type, paper, ink and labor cost entirely too much for any dullards neponistic aspirers or gallery politicians to play the Judas at their job. The cackling of geese saved Rome, but it is beginning to look as if the policies of fools were about to betray the science of medicine into a bondage

that will be worse than death for the profession and definitely lethal to the common people. As to the section of aristocrats who are trying to save themselves from their own sins by placing the burden on the medical profession the sooner that a number of these perverted unbalanced idlers find a happier hunting ground the better it will be for everybody. Their radical policies are pap and sugar tits to the reactionaries and they make men of medicine think about doing everything else in the world except what they are signed up to do—make sick people well.

It staggers one's mind when one stops to think what it all means when a most learned man like Dr. Vincent as has been cited previously, calmly proceeds to map out what really seems likely to be in store for medicine in the immediate future. As unjust, as unworthy, and as retrogressive as it all is, medical men know that the calamity has come upon us, through the working of evolutionary law. Some place, some where, the seed of this thing has been sown and has been allowed to develop. Dr. Hobert Amory Hare pointed out in an article in the *New Jersey Medical Journal,* that the medical officials who urge these radical destructive policies, are as a rule, men who have failed in the real practice of their profession, and have become a species of professional fixer as they would be called in political life. In many instances these men are not clinicians now, nor have they ever been, nor are they in touch with the practice of medicine, nor with the sick, nor in sympathy with the practitioners of medicine. They are typical reformers or manipulators. They have a temperamental slant in that direction. They can't help what they do, any more than a hound dog can help chasing rabbits. They may be good publicity manipulators but they have no place in the editorial chairs of state medical journals. Elements like this do harm. They keep the state journals off the main track. And if the medical journals had been going along in their right groove, the doctors would not now be afraid to exercise their legitimate right of prescribing narcotics for sick people, nor would we have that maternity law, alcohol regulations and the rest of the things that were all slid through in about the same way and all of which tend to make the practice of medicine subservient to lay manipulators and meddlers.

The true function of the state journal is that of conducting medical news gathering for the medical profession. This news is much more effective if accompanied by editorial comment for clarification purposes. But if the news that a man wants most to know about his profession is now news telling how the profession is being stuck behind the ears, then what is it? I can tell you right now that the most important piece of news any periodical could bring to me right now is whether I am going to be hanged before morning or not, and if I am, what is the idea? And it is true that mass news varies little in its general nature from individual news? What have the editors of medical journals been at when they haven't been purveying this sort of information? And if I am going to be hanged on Thursday morning, what good is it going to do me if the newspapers do not carry that information until Saturday night? That is about the time record that has been achieved by some of the medical journals on the question of vital medical news. And you all know it. The dangerous feature of present-day medical journalism is that some men lose sight of the interests of the whole profession in the attempt to further their personal interest. And if any man decries the weight that medical journalism has upon the future as well as the present of the profession, I ask him to turn to history. What about "Uncle Tom's Cabin?" What about that axiomatic doctrine, "Let me but make the songs of a nation and I care not who sharpens its axes." Believe me, the welfarers have been up and doing early and late with the force of propaganda and look at the current state of affairs! That is answer enough.

The forces of unrest know the workings of the natural law, "along the lines of least resistance." They are taking advantage of it to menace the welfare of the people through that social disease known as welfare legislation, trying to make of the doctors nothing but cogs in a huge political machine and trying to capitalize the health of the country for political boodle.

It is up to the doctors to go to the people and to preach as well as practice preventive, physical, social and political medicine and to give the fixers and heelers such a dose of their own game that every charlatan from the drugless therapists to the voodoo doctors will howl for mercy. The columns of the public press, the public school auditoriums and the slides at the moving picture theatres should be asked to aid us. Let us conserve what centuries have built. Provide a corps

of lecturers if need be, but get the facts out to the people as to what medicine is. Teach the public to know the real from the sham. And, the very first step in this campaign can be taken by the state medical journals when they line up and set about teaching the doctors that it is up to them to get out as individuals, and to educate their patients and the others, too, if need be as to what preventive medicine is, and why medicine has accomplished what it has done, and exactly what state medicine, compulsory health insurance and all the rest of it is going to be when the octopus gets its tentacles around the unsuspecting American public. Prohibition hardships won't have a look in when it comes to discomfort.

Clean up, and get out and bring in the news and what it means to your clientele is a good motto for the editor of a state medical journal to hang above his desk. Let him sit down and take an inventory of himself and his deeds. Does he know his business? Is he interested in his job or running it as an eleventh-hour thought and chiefly by picking out haphazzardly from the mails any bunk that comes to him without bothering to verify it or to ask himself what effect the words that he is printing are going to have upon his readers and the public. If he can't make good to himself, let him get out. And if he can't make good in the minds of the thinkers and the alert men in his society, let them put him out. Service is the first work of a medical journal and when it fails to serve, it slays.

Right now, service in this instance means educating the doctors everywhere to the pestilence that is on every hand and about to envelope in lethal fumes our most sacred profession.

25 E. Washington St.

ECTOPIC PREGNANCY*

ANDY HALL, M. D.
MT. VERNON, ILL.

In this paper I shall not attempt to cover the entire field of this important subject; neither have I anything new to offer, but will simply try to emphasize a few points that we should all bear in mind in order that we may recognize these cases more promptly and give them the best possible treatment. The points to which I wish to call your attention are these:

1. Many ectopic pregnancies are overlooked.
2. An ectopic pregnancy is not a rare occurrence.
3. Once a diagnosis is made, prompt surgical measures should be instituted.

It is my opinion that many of these cases are overlooked with disastrous results to the health and lives of these patients. Some die and are no roubt reported under the head of peritonitis, septicemia, and other causes. While others result in pelvic abscesses, pelvic adhesions and other complications and sequellae that leave the victims chronic invalids for life.

Hunner says "there is no serious intra-abdominal condition which has the diagnosis written all over its face more clearly than has extra-uterine pregnancy, and at the same time has been more often overlooked."

Not long since I attended a meeting of a county medical society and read a paper on this subject, reporting several interesting cases that I had recently had. There were twelve or fifteen physicians present. Some of them had been in active practice forty years or more. But in the discussion which followed not one present would admit that he had ever seen a case in his practice.

Living in most every community you will find physicians doing an extensive general practice. They will tell you of the hundreds of babies they have delivered. They will tell you of the many pairs of twins they have delivered. But they will also tell you, if questioned, that in the many pregnant women they have attended, they have never had an ectopic.

This is possible but not probable, for according to reliable observers ectopic pregnancies occur about as frequently as do twin pregnancies, one in every ninety cases. A physician who has attended hundreds of pregnant women and never had an ectopic has either been very fortunate in his cases or very careless in his diagnosis.

The principal reason why ectopic pregnancies are so often overlooked is because many of the men who see these cases first, the family physicians, have an idea that it is a very rare condition. Hence, when they are confronted with an acute pelvic condition they at once think of the more common lesions, such as an intestinal colic, appendicitis, threatened abortion, or a salpingitis, and make their diagnosis accordingly.

Just how frequently an ectopic pregnancy occurs is not positively known. Not every preg-

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nant woman submits to a careful physical examination. Then as one writer puts it, "there are many cases in which the disease is never suspected, for the foetus dies and is so to speak entombed." Then there are other cases in which the patient dies and no autopsy is made to clear up the cause of death. But in recent years with the more careful methods of diagnosis, the many good hospitals located in the smaller as well as the larger cities, and the impunity with which the abdomen is opened to clear up suspected and doubtful cases, we know that ectopics occur more frequently than we had ever dreamed possible a few years ago.

Hunner reports that 36 cases of ectopic were found in 3300 cases of pregnancy examined in the gynecological service of the Johns Hopkins hospital. This is one ectopic in every ninety-two pregnancies. He also reports finding 34 ectopics in 2100 private cases of pregnancy examined. This is one ectopic in every sixty-two cases of pregnancy. Among the cases of pregnancy presenting themselves at the out patient department of the Leland Stanford University, one out of every one hundred and thirty-one was found to be an ectopic. Lytle reports a large series in which one out of every sixty-two was an ectopic.

But the question might be raised that abortions miscarriages, and venereal infections are more prevalent in the great cities than they are in the country districts. And as salpingitis and pelvic adhesions often follow these conditions, which are some of the potent causes of ectopic pregnancy, a greater proportion will be found in the great cities. This may possibly be true, but I doubt it. It is my honest opinion that your city "flappers" have nothing on their country cousins. However we may fail to diagnose these conditions more often than men in and near the great medical institutions.

As to the cause of ectopics: it would seem that any pathological condition that will inhibit the passing of the ovum into the uterus, but at the same time will not prevent the spermatozoa passing into the tube may be a potent cause of ectopics. Salpingitis, pelvic inflammations causing adhesions, twisting or kinking of the tube, or pressure of a tumor are some of the causes given. But cases occur in which there is nothing in the history or findings to account for same.

As an ectopic in one tube is followed by an ectopic in the other tube in about one case out of every five, some have advocated prophylactic measures by removing the opposite as well as the diseased tube. I would not do this unless the patient already had all the children desired and requested that it be done. Personally I have never known its recurrence in any case we have had. But I do know of several of our patients who have borne normal children following the removal of an ectopic tube, and at least two of our patients have each borne two children following this operation. Should an ectopic recur in the opposite tube the same measures of safety employed in the first case could be practiced in the second.

Practically all ectopic pregnancies are tubal at first. A rupture or tubal abortion usually occurs from the fifth to the eighth week. Occasionally a rupture occurs prior to the fourth week in women who have never missed a period. These early ruptures often give no history or symptoms of a probable pregnancy—hence they are the most difficult in which to make a diagnosis. It is seldom that a rupture occurs later than the twelfth week. Once in a great while following a rupture or tubal abortion the foetus will survive until maturity. But in the interest of the mother this should never be permitted, once a diagnosis has been made.

When called to the bed-side of any woman suffering from an abdominal trouble if she is of child-bearing age, we should always bear in mind the possibility of a pregnancy. If she is suffering from an acute pelvic condition, we should consider the possibility of an ectopic pregnancy.

One of the most important considerations in the diagnosis of an ectopic pregnancy is the history. If it contains a record of exposure to pregnancy, missing a period followed by an irregular flow or spotting from time to time, nausea and vomiting, changes in the breasts, a history of a previous pelvic inflammation or ectopic pregnancy, a history of several years of sterility, and if in addition the patient has suffered from irregular colicy pains low down in one side of the pelvis, our suspicions of a probable ectopic should be aroused.

If in addition to the above history we find a large tender mass in one tube and the uterus but slightly enlarged with a soft cervix, and the patient with a normal temperature, it is almost

certain that we have an unruptured ectopic pregnancy to treat.

If in addition to the above history and findings, you get a history of an acute sudden excruciating pain low down in one side of the pelvis followed by prostration; and if upon examination you find a boggy mass in Douglas culde-sac, with a rigid pelvic abdomen, and your patient suffering from symptoms of an internal hemorrhage, you no doubt have a ruptured ectopic to deal with. And if it has been of several days duration, your patient may have a slight elevation of temperature—not usually higher than 101.

Cullen in 1919, and Novak recently have called attention to a "bluish discoloration of the umbilicus as a diagnostic sign where ruptured extra-uterine pregnancy exists."

If a diagnosis is made before a rupture has occurred all agree that a prompt surgical operation should be made and that there should be no mortality. But unfortunately most of this class of patients do not seek medical advice until a rupture has occurred and they are suffering from severe pain, internal hemorrhage, and perhaps more or less shock. What then should be the treatment?

Some writers have suggested that very few of these patients ever bleed to death from the primary hemorrhage. And they advise that better results will be obtained to await until the hemorrhage has ceased and reaction has occurred before operation. But unfortunately many of these patients do not react and hemorrhage does not cease until death supervenes. Besides no man can foretell in any given case whether the hemorrhage will be slight or fatal.

Before surgery was universally recognized as the rational method of treating these cases, John S. Parry collected 500 reported cases in which the result was known in all but one. Of this number 366 died and 163 recovered. Of those dying, 174 were from rupture and hemorrhage: 81 bled to death within the first 24 hours: 78 within the next 24 hours, and 15 later. Sepsis and exhaustion were some of the other causes given.

In 1889 Dr. Henry F. Formand, as coroner's physician in Philadelphia, reported that in six years he made 22 autopsies of women who had suddenly died of ectopic pregnancy. "All these cases were tubal and in all the fatal rupture occurred from the fourth to the eighth week of pregnancy. Death happened in all cases save one, within twelve hours, and in that case it was delayed five days."

Grandin reports more than 100 cases where timely elective operation was possible with the mortality nil. He further says "deferred or 'cold storage' cases in which hesitancy rules, instead of bold surgery that characterize men who know from ample experience, are the ones that carry a mortality." John B. Deaver operates as soon as possible after the diagnosis is made. He reports 110 cases of ectopic pregnancy, many of them the acute type, operated on without a death. Other operators report similar good results.

I have seen 21 cases of ectopic pregnancy. Many of them acute. My first case was seen soon after leaving school, in consultation with an older physician. An operation was refused and the patient died from hemorrhage the next day. The remaining 20 cases were all operated on and 19 recovered. The only death occurred in a double ectopic, "cold-storage" case, that had been treated by another physician six or seven days before a diagnosis was made. She had bled until almost pulseless; her abdomen was simply filled with blood. She died five days following operation from peritonitis.

Two of my cases were of more than usual interest. In one of these, a left tubal pregnancy, the rupture did not occur until the twentieth week. And when it did occur, there was no shock and no hemorrhage. The foetus, nine inches in length was found underneath the liver. The tube was removed with placenta intact, and she made an uninterrupted recovery. The other case was a twin pregnancy, an intra-uterine combined with a tubal. The tube ruptured at the eighth week, accompanied with pain, internal hemorrhage and shock. She was operated on at once, and the diseased tube removed. Not until the abdomen was opened did we discover that she had a uterine pregnancy. She made an uninterrupted recovery and seven months later was delivered of a normal baby. Since then she has given birth to another baby.

In conclusion I will say there is perhaps no other serious lesion in which an early diagnosis and prompt treatment are more essential than in an ectopic pregnancy. An error in diagnosis means an error in treatment, often with disastrous results to many of these patients. While

a correct diagnosis and early surgical treatment means almost 100 per cent of valuable lives saved.

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DISCUSSION

Dr. Carey Culbertson, Chicago: This paper comes very well indeed before this Society with emphasis upon the fact that ectopic pregnancy is not recognized clinically. It is not recognized because it is not thought of for one reason and another is the text-book teaching that sudden collapse is the diagnostic factor. This is one of the errors still present in our text-books. Now the reason why shock and collapse are not present in many ectopic pregnancies is explained when we study the pathology of tubal gestation. Tubal gestation in many respects differs from uterine pregnancy. In uterine pregnancy we have a well developed decidual membrane which has two functions, that of receiving, or nourishing, the imbedding ovum and that of protecting the imbedding structure from the trophoblast. In the tube conditions are different. There is not enough decidua to protect the tissues. In practically every ectopic pregnancy that we have, where it is possible to make good serial sections, it can be seen in those sections that the ovum lies in the wall of the tube; in other words, if there is not enough decidua there for the ovum to bury itself in, the trophoblastic cells will infiltrate directly into the tube wall by a process of erosion, probably the same thing as cellular digestion. Again, these cells open up blood vessels, the hemorrhage from which they cannot control. In uterine pregnancy in the decidua we have nothing but fine capillaries and in the opening of these capillaries the trophoblastic cells do not permit more blood to escape than can be controlled. In tubal pregnancy that is not the case. More blood escapes than the gestation sac can control and as a result we have either a hematoma in the lumen of the tube or else if the erosion is clear through the wall of the tube the spill of blood is on the outside into the true pelvis. It is only a question of whether the blood vessels that are opened up spill enough blood to bring on anemia, shock and collapse. In a great percentage of the cases that is not so and shock and collapse are not seen. In my own experience I have not seen one case in fifteen which I considered an emergency. By emergency I mean a case that requires operation on diagnosis. The teaching still exists that as soon as the diagnosis of ectopic pregnancy is made the patient must be operated on at once, even if that means two o'clock in the morning. I do not agree with that statement. If I see the patient in the afternoon I wait until my regular operating hour the next morning unless I feel that her condition does not warrant so doing. I know there are cases that are emergencies. There are patients that come in in such a condition that it is a question whether they will survive the hemorrhage or survive the operation, whether we should take a chance at operation or wait and see if they will survive the hemorrhage. There can be no cut and dried rule; each man must use his own judgment. Maybe he saves life and maybe he does not, but the great majority of these cases are old hematoceles. They are what we might call chronic hematocele due to so-called abortion or so-called rupture. I do not believe there is anything in tubal pregnancy comparable to uterine abortion. As far as rupture is concerned, I do not believe in that either. The idea that the tube splits and opens is not in accordance with our modern idea of the pathology of gestation. The hole in the tube is an erosion due to the cutting through it of the trophoblasts and chorionic villi and the spill of blood is either through the wall or out through the fimbriated end of the tube. When it is out through the fimbriated end it is due to the fact that the gestation sac embeds there.

We get the idea that ectopic pregnancy may occur only in malformed tubes. It may occur in perfectly normal tubes that show no evidence of disease. I had two cases this past winter where the tube was perfectly normal and where the gestation sac was embedded in the fimbriated end. This was proven by sections showing the chorionic villi with the rest of the tube perfectly normal. We believe that the great majority of these cases occur in tubes that are diseased and usually the disease is inflammatory in nature. The tube must be in that condition which we ordinarily call chronic catarrhal salpingitis; that is, thickened and kinked but patent. The reason why we have a chronic hematocele is because the spill of blood is not so marked that the patient reacts to it very considerably. Most of these cases of chronic hematocele are regarded as chronic salpingitis. They come in over and over again with the diagnosis of salpingitis or pelvic abscess. The reason why we diagnose a large number prior to operation is because we have learned not to forget pregnancy. Today in my work any pelvic mass with a history of preceding pelvic pain or lower abdominal pain with menstrual disturbance—those three things alone are enough to make one think of ectopic pregnancy; not necessarily enlargement, but a pelvic mass, pain of some sort or other. it does not make much difference. The patient very frequently thinks she has indigestion or inflammation of the intestinal tract or stomach. Added to this is some menstrual disturbance; I do not care how much it is. Some of these patients do not have a period of amenorrhea preceding the attack of pain, but as a rule they do. Then they begin to bleed some days or a few weeks after they have missed one period or two. I have seen some

cases that were very characteristic of ectopic pregnancy and yet I could not prove it by microscopic sections even with free blood in the pelvis. They were so old that the chorionic villi had been entirely absorbed as well as the embryo, so there was no proof left that it was an ectopic pregnancy. It is just the bringing forth of such cases as Dr. Hall has so well reported here that emphasize the importance of bearing in mind the possibility of ectopic pregnancy. I do not see why ectopic pregnancy is more frequent in the city than in the country. I am sure, as he said, it is just as frequent one place as another.

Dr. J. B. Moore, Benton: I just want to emphasize the importance of recognizing tubal pregnancy by citing two little experiences that I have had. In 1914 I saw a woman who had been under the care of the doctor for ten months. She had been married seven years with no pregnancies. The doctor had been with her all night thinking she was in labor, but she did not deliver. The next day the fetal movements, which had been very active, ceased. I saw her two days later and three days later got permission to open the abdomen. This was a case of full term extra-uterine pregnancy with an 8-pound boy fully developed. It meant a good deal to this family, who were very desirous of this child, which could have been saved a few days before. This was reported in 1916.

In 1919 I had occasion to see a woman who had been curetted three times in a period of 24 hours by a doctor who did not recognize tubal pregnancy with intra-abdominal hemorrhage. This woman was operated on under local anesthesia infiltration and died five days later from septicemia following, as we think, the curetments.

Dr. Andy Hall, Mt. Vernon (closing the discussion): I wish to thank the gentlemen for discussing the paper. There is nothing further to add.

HOW TO MEET OBSTETRICAL EMERGENCIES

George Gellhorn, M. D., F. A. C. S.

ST. LOUIS. MO.

The practice of obstetrics makes very exacting demands on the physician. Existing conditions may undergo rapid changes. What seemed to be a perfectly normal case but a few minutes ago, may suddenly develop into a serious complication to mother or child. Quick decisions may have to be made, new indications for intervention may have to be formulated, and often there is no time to consult a text-book or call in a colleague. Under these circumstances it is of considerable importance to the practitioner to have a clear-cut picture in his mind of the principles of treatment of the various obstetrical emergencies which he may encounter in his daily work. A few of the most serious complications will be discussed in the following:

ECLAMPSIA

This is not the place to speak of the varied etiology of eclampsia nor to go into details regarding the enormous value of prophylaxis. Suffice it to call attention to the great frequency of eclampsia which occurs once in every 500 pregnancies and, according to mortuary statistics in large cities, is the cause of death in one out of every 1,000 cases of death in women. It has been estimated that about 50 per cent of untreated women used to die from the disease, and that the fetal mortality ranged between 30 and 40 per cent.

The oldest form of treatment consisted of venesection combined with morphin and chloroform; and under this, the maternal mortality sank from 50 to 30 per cent. In 1893, Duehrssen warned against all narcotics and recommended immediate delivery by means of vaginal Cesarean section; and he succeeded by his treatment in reducing the mortality to about 20 per cent. Somewhat later, this very aggressive mode of treatment was abandoned by Stroganoff, Zweifel, et al., in favor of a more conservative therapy consisting of venesection together with a better choice of narcotics, namely, morphin and choral hydrate, with the result that the maternal mortality decreased to 8.9 per cent, the fetal mortality to 22 per cent.

At the present day, two methods of treatment compete for supremacy. In hospital practice, the abdominal Cesarean section has given most encouraging results both to mothers and children, and it may be added here that every case of eclampsia would be better off in a well equipped maternity hospital. But this is obviously impracticable in the majority of instances, and the practitioner has a good chance of reducing the maternal mortality still further to somewhere between 3 and 5 per cent if he adopts a plan of procedure which is half way between the conservative method of Stroganoff and Zweifel and the more active mode of Duehrssen.

The details of this form of treatment are as follows:

As a preliminary, aspiration pneumonia should be prevented by lowering the head of the

*Read at a joint meeting of the Macon, Champaign and Piatt County Medical Societies, held at Monticello, Ill., Sept. 7, 1922.

unconscious patient and from time to time wiping out mucus or vomited material.

If the stomach is distended, it should be washed out. Tongue and lips must be protected by a gag, a spoon around which a handkerchief has been wound, a clothes pin, or the like.

This being done, the routine treatment is carried out by a number of successive steps.

1. Hypodermic injection of morphin gr. 1/6. Darken the room. Protect the patient from disturbing noises within or without the room.

2. Fifteen minutes later, when the morphin has taken effect, start a *light ether narcosis.* Do not use chloroform, as this anesthetic produces definite lesions in the liver which has already been gravely affected by the eclampsia. During this ether narcosis which is kept very light merely for the purpose of reducing all irritation to the central nervous system:

(a) Catheterize the bladder and examine the urine for albumin. If you have no facilities on hand, such as a test tube, boil the urine in a large spoon and add a few drops of vinegar. (The exact amount of urine excreted in 24 hours, and the microscopic examination for casts have no immediate importance, but they are most valuable in so far as they permit to a certain extent to make a prognosis.)

(b) Make an examination to determine the stage of labor. Make a rectal examination, if your gloves are not yet sterilized or the patient is not yet cleaned up. A vaginal examination made with the strictest antiseptic precautions, however, is preferable. If the dilatation is complete and the head low in the pelvis, deepen the narcosis and apply forceps; express the placenta by Crédé's method, but refrain, if at all possible, from manually removing the placenta on account of the danger of infection.

If the child lies in transverse position, turn and extract it. If there is a breech presentation, pull down a leg and extract the fetus. *Under no conditions, however, perform any of these operations unless the cervix is fully dilated.*

3. While the patient is still under light ether narcosis, make a venesection of 1 pint—more would be inadvisable because the patient is going to lose some more blood during the delivery; less than a pint would be without value.

4. Institute the Stroganoff treatment, viz.:

(a) An enema of chloral hydrate, grains 30 in 10 ounces of milk, one hour after the first morphin injection.

(b) A second hypodermic injection of morphin, gr. 1/6, 2 hours later.

(c) Another enema of chloral hydrate, grains 30 in 10 ounces of milk, 4 hours later.

(d) An enema of 10 ounces of milk containing 15 grains of chloral hydrate in mild cases, and 30 grains in severe cases, 6 hours later.

(e) Repeat this enema after 8 hours, if the patient still has convulsions. Even if the convulsions cease soon after the beginning of this treatment, continue the routine as outlined for 10 or 12 hours. It is advisable to put the patient under a light ether narcosis while the enemas are given; at the same time, the patient may be catheterized, an examination made, and the child delivered as soon as the os is found completely dilated.

(f) In serious cases with frequent attacks inject subcutaneously or intravenously 1 pint of sterile saline solution twice within the first 24 hours.

(g) The same mode of treatment is carried out, if the convulsions first occur after delivery, with this modification that a venesection is made only if the loss of blood in confinement has been small.

5. If the treatment was successful and the patient delivered safely, give milk in large quantities for several days and later salt—free diet without any meat, eggs, or other proteins. When repeated urine examinations show absence of albumin, the patient may take a general diet.

6. The patient should not nurse her child for the first two days.

7. During the lying-in stage protect the patient against excitement, worry or strain of any kind; in particular, keep visitors out of the sick-room.

8. In very unfavorable cases with coma and little or no urinary excretion, rush the patient to a hospital and have both kidneys decapsulated as a last resort.

The plan outlined in the foregoing combines the advantages of the active and the conservative therapy. Expectant treatment is persisted in until conditions are favorable for delivery. Then, and only then, labor is rapidly terminated by methods which, with the precautions observed,

can bring no harm to the mother. All irritation of the central nervous system is carefully kept away or reduced to a minimum, and every effort is made to relieve the poisoned organism of its toxicity. Besides, the whole plan is so simple that it requires no hospital facilities and can be carried out successfully by every practitioner.

PLACENTA PRAEVIA

Every busy obstetrician is bound to see a number of cases of placenta praevia, for this condition occurs once in 300 to 1,000 cases; and the need for being alive to the seriousness of the situation may be gauged from the face that even under the best treatment about one in every six women dies from this complication and that the fetal mortality runs as high as 75 per cent. (LaVake). Fortunately, there are in most cases certain danger signals to put us on guard—a painless and apparently causeless hemorrhage occurring in the last three months of pregnancy, usually scant, but sometimes free, which ceases after a while but is apt to return at any time, perhaps much more profuse than at first. Again, the first appearance of bleeding may not take place until about the expected date of confinement without any premonitory sign and any uterine contraction and may at once be so abundant as to immediately endanger the life of the patient. The diagnosis can be made with certainty only by passing a finger through the cervix and feeling the placenta in the lower uterine segment or, if the cervix is still closed, by feeling a boggy mass above the vaginal vault through which the presenting part can not be made out distinctly.

Every case of placenta praevia belongs in a hospital not only because of the hemorrhage from which the patient may bleed to death but because of the enormous chances of infection that accompany any vaginal examination or manipulation unless conducted under the most favorable and antiseptic circumstances. The management of placenta praevia in a well-equipped lying-in hospital differs materially from that in a private home and offers much better chances for both mother and child.

Here, however, we have only to consider those cases which, for any reason, can not be transferred to a hospital and must be delivered at home. For the treatment of this class of patients, the following rules and principles are suggested.

1. On the first appearance of bleeding, empty the uterus at once. Do not delay action in the hope that the bleeding may not return, or if it does, that it may be slight. Expectant treatment is a serious mistake; the mother is likely to suffer from it, and the child will probably die anyway.

2. The method of emptying the uterus depends on the conditions found in the individual case.

If the bleeding occurs in pregnancy and the cervix is still closed, labor must be induced by packing the vagina. The patient is shaved and cleansed as for an operation and placed on a kitchen table. All instruments are sterilized and sterile gloves are worn. The vagina is separated by a bi-valve speculum, and first the fornices, then the upper vagina, and finally the vaginal outlet are *firmly and systematically* packed. Sterilized 2 inch roller bandages, soaked in ¼ per cent. lysol solution and then squeezed dry, are a particularly handy material. Uterine contractions will ensue, and if part of the packing has been introduced into the cervix, dilatation of the cervix will be more certain to occur. Remove the pack after 12 hours, or sooner if the bleeding continues. Subsequent treatment is the same as if the patient were in actual labor and coincides with the steps now to be described.

2. With the head presenting and the placenta occupying only one side of the lower uterine segment (lateral or marginal placenta praevia), the descending head will act as the best plug to check the hemorrhage.

Artificial rupture of the membranes will stimulate the uterine contractions and force the head more securely against the loosened edge of placenta. One or two drops of pituitrin may be given to intensify the action of the uterus; a larger dose of pituitrin is dangerous. Leave the rest to the natural forces; only if the head is low and the dilatation complete, may forceps be applied.

3. If the breech presents, rupture the membranes and pull down a foot.

4. If there is a central placenta praevia, podalic version is made according to the method of Braxton Hicks. The cervix must admit at least two fingers; if it is not wide enough, it is dilated manually until two fingers can be passed

through. Do not hesitate to push your fingers through the overlying placental tissue and force the presenting head to one side, while the external hand moves the breech towards the pelvic inlet. Then seize the knee or foot that comes within reach of the inner fingers and draw it into the vagina. The version is completed as soon as a foot appears in the vulva. *Do not extract the child,* but sling a long tape on the foot and apply steady but very gentle traction by means of a pint bottle filled with water—just enough to hold the breech in close contact with the bleeding surface. Leave the expulsion of the child to nature, and do not begin to extract the child until the buttocks appear at the vaginal outlet. If the child is dead, perforation of the after-coming head will facilitate matters.

5. Usually, the placenta is expelled immediately after the child. If this does not happen, remove the placenta at once and pack the entire uterus firmly with sterile gauze bandages so as to insure good contraction and prevent further loss of blood. This done, give a hypodermic injection of ergot and put the patient to bed, apply hot water bags and start a saline or tap water proctoclysis.

6. Remember that all manipulations about the cervix must be very gentle because of the friability of the tissues, and that a fatal sepsis may occur unless all examinations and applications are done with the most careful antiseptic precautions. Do not pack the vagina unless the cervix is closed. If the cervix is opened and placental tissue exposed, vaginal tamponade is more harmful than efficient. If you decide to transport your patient to a hospital, tamponade of the vagina will not be of any use. It is far better to give the patient a hypodermic of morphin and to trust to luck.

POST-PARTUM HEMORRHAGE

It is impossible to estimate the frequency of this alarming complication with any degree of exactness. Statistics understate rather than overstate the percentage of post-partum hemorrhage. In the Glasgow Maternity Hospital, for instance, it occurred once in every 126 cases, and the death rate was 1 in 2,331 cases. That may not seem a very high death rate, but you must realize that in modern lying-in hospitals post-partum hemorrhage is much less frequent than in private practice where most cases go unrecorded. *One fact is certain that post-partum hemorrhage is far more frequent than need be;* for, with the exception of the comparatively few instances where the uterus has been so enfeebled by a severe and protracted labor that it is unable to contract vigorously, the great majority of cases are caused by faulty management on the part of the obstetrician. That means that most cases of post-partum hemorrhage are preventable and that prophylactic treatment is as important, if not more so, as curative treatment.

Prophylactic Treatment. Under this heading the more common causes of post-partum hemorrhage are enumerated and thereby the proper way of preventing this accident suggests itself.

1. Deep cervical lacerations tearing into one or both uterine arteries can occur only if forceps or other obstetrical operations are performed *before* the external os is fully dilated. Attention to the fundamental principle in obstetrics never to operate until complete dilatation has taken place, will eliminate this source of post-partum bleeding.

2. Precipitate forceps or breech extraction is apt to be followed by hemorrhage; hence, delivery though speedy, should not be too rapid.

3. After the birth of the child whether it be spontaneous or operative, give the placenta time to detach itself from the uterine walls. Nothing can be worse than trying to shorten the third stage of labor and depriving the tired uterus of the few minutes of rest it needs after the physical effort of the confinement. A moderate amount of bleeding from the vagina will indicate that the placenta is beginning to be loosened. Rubbing the fundus at this time would only disturb the natural mechanism; the separation of the placenta thus unduly hastened might become imperfect, parts of placenta or membranes might remain attached to the uterine walls, and a hemorrhage be the result. Hence it is not only safe but absolutely necessary to wait for spontaneous developments twenty to thirty minutes after the birth of the baby. It is not even desirable to keep a hand on the fundus. One can plainly see the fundus rise above the umbilicus, usually more to one side than in the center, when the placenta has been expelled into the vagina. Bearing down on the part of the pa-

tient, aided by a very slight pressure from above, will then deliver the placenta safely and intact.

4. Only if the uterus shows no signs of getting rid of the placenta after half an hour, may the Crédé method be employed; but it must be added that many careful men wait a considerably longer time. It is most essential that the Crédé method be carried out strictly according to the instructions found in every text-book of obstetrics. Never do a Crédé expression without first bringing on a contraction. Failure to express the placenta in just the right way may result in hemorrhage either from pieces of placental tissue being left behind or from inversion of the uterus.

5. Chloroform or ether given too long or too freely in labor tends to produce a profound relaxation of the uterus with subsequent hemorrhage. Chloroform is particularly objectionable. Use ether, but only in drops, and only at the beginning of contractions.

6. A full bladder may interfere with the uterine contractions both before and after the birth of the child and eventually lead to hemorrhage. If necessary, catheterize with all aseptic precaution.

7. After the expulsion of the placenta, give as a matter of routine ergot by hypodermic injection, or if the patient is conscious, by mouth *provided the placenta, on careful inspection, is found intact.*

8. After labor when the patient is back in bed, watch the fundus for one hour or have some one else do it, lest a delayed atony of the uterus give rise to a hemorrhage. Do not rely on a binder or a roll of towel to relieve you of this very necessary act of supervision.

Curative Treatment. If confronted with a post-partum hemorrhage the practitioner must act without a moment's hesitation. While he is trying to make up his mind what course to pursue, the patient's life may be ebbing away. The bleeding comes either from the torn cervix or the uterus. The question is quickly decided. In the former case the uterus is well contracted, in the latter, the fundus is soft, relaxed, enlarged. Hence the following rules:

1. In hemorrhage from the cervix, push the uterus hard down until the anterior lip appears in the vulva. Apply a tenaculum to this lip and pull down steadily but gently. The posterior lip may then appear and is caught in the same way. If however, it remains way back in the vagina, the tenaculum must be placed in the posterior lip by the sense of touch. As soon as the tenacula are in place, you are master of the situation, for a steady pull on the instruments will stop the bleeding at once. You may attach a weight to the tenacula and leave them in place for 24 hours, but it is much better to suture the tear at once. As any operative delivery is apt to lead to lacerations, the thoughtful physician will not apply forceps unless he has everything ready for immediate repair.

2. If the bleeding comes from the relaxed uterus, grasp the fundus through the abdominal walls and massage it energetically until it contracts and expels the blood clots or other material which may be the cause of the atony. While massaging the fundus, inject an ampoule of pituitrin into the deltoid or gluteal muscle and follow this up with a hypodermic injection of one ampoule of ergot aseptic, ernutin, or other ergot preparation. Always keep a sterilized hypodermic syringe on hand when attending a case in labor.

3. While massaging the fundus, bend the body of the uterus sharply forward towards the symphysis. This "external compression" between hand and pubic bone often suffices to check the bleeding and produce a strong contraction of the uterus.

4. If this procedure fails, insert two fingers, or better still, the whole hand into the vagina and compress the uterus between two hands.

5. If the bleeding persists and previous inspection of the placenta has revealed its incompleteness, the hand must be introduced into the uterine cavity, any remaining placental tissue removed, and the uterus massaged over the closed fist with the other hand on the abdomen. This manoeuver while very efficacious as far as checking the hemorrhage is concerned, is very dangerous because of the possibility of infection. It goes without saying that any vaginal or intrauterine manipulation requires the most painstaking surgical cleanliness. It would be a poor satisfaction to stop a post-partum hemorrhage only to lose the patient a few days later from puerperal sepsis.

6. A very hot intra-uterine douche of normal saline or a ¼ lysol solution materially helps to

stimulate contractions, but in general practice either the necessary implements or intelligent assistance are usually lacking. Therefore, as a last resort, intra-uterine packing is more readily accomplished. This again demands careful attention to asepsis. Unless you carry sterilized gauze packed in jars for this special purpose with you, the ordinary gauze roller bandages which are sold sterilized and wrapped in paper, are very serviceable. You need at least 15 yards, that is to say, 3 rolls which are tied to one another. Introduce them very systematically, first tightly into the uterine horns, then the upper part of the uterine cavity, finally the lower segment. Tie to this intra-uterine packing other roller bandages which fill the vagina completely.

7. Some of these procedures require a little time of preparation during which the patient might possibly bleed to death unless the aorta be compressed temporarily. This can be done by any intelligent bystander who is instructed to push his fist between the recti down upon the abdominal aorta whose pulsations can plainly be felt, and to compress it against the spinal column. This auxiliary method can be continued for five or ten minutes, and often the resulting anemia alone may cause a reflex contraction of the uterus. Its main object, however, is to gain time without injuring the patient's chances.

8. After successful treatment of the complication, guard against a return of the bleeding by placing an ice-bag or a piece of ice on the abdomen over the fundus.

9. When the hemorrhage has been arrested, the patient may still be in grave danger from the excessive loss of blood. It is, therefore, imperative that the acute anemia be attended at once. Raise the foot end of the bed, remove the pillows under the head and apply heat externally. The patient should be made to drink large quantities of fluids as soon as the shock is lessened. Hot beef tea with plenty of salt is advantageous. In some cases, hot weak tea is better tolerated by the stomach. Rectal enemas of hot water, alone or combined with black coffee, the entire amount not to exceed 6 ounces, should be given every four to six hours. Digalen (20 minims), Caffein gr. 1, pituitrin, and ergot should be injected alternately every 2 hours, and the injection of morphin. gr. 1/12 to 1/8, every 4 hours will help to allay the dyspnea and restlessness of the exsanguinated patient.

As soon as it can be procured, a hypodermoclysis of saline solution should be given but care must be taken not to overload the weakened heart by too great an amount of fluid introduced into the circulation. When the acute stage is over, well-selected food and proper care will nurse the patient back to health.

SUMMARY

There is in all these rules nothing that is new or untried. Countless numbers of experienced men have worked them out for the salvation of their patients. In this paper, the various steps have merely been put in logical order so that the practitioner may find it easy to memorize them. On every ocean liner fire drills are practiced frequently so that in moments of danger confusion and indecision may be averted and everybody may learn automatically as it were, to attend to his particular business without delay. In like systematic manner should our actions be governed when we are suddenly confronted by any of the dangerous emergencies discussed in the foregoing. We shall then merit to the fullest the confidence of our patients in the hour of need.

Metropolitan Building.

CESAREAN SECTION UNDER LOCAL ANESTHESIA*

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Cesarean section under local anesthesia is not new, for the writer saw the operation performed this way six years ago at a famous gynecological clinic. Late text-books on operative obstetrics, in discussing Cesarean section, advice either gas-oxygen anesthesia or ether, and a good many of them do not even mention local anesthesia, to say nothing of naming it as the anesthetic of choice. This paper is written as a plea to make novocaine the anesthetic of choice for Cesarean section, and to make its use the rule instead of the exception for this operation.

The use of local anesthesia should no longer be confined to minor surgery, and to cases in which the patient apparently cannot undergo the ordeal of taking a general anesthetic. Chloroform, ether, and gas, although they have been a great boon to surgery, have so many disadvantages, and

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their use is accompanied by so much discomfort to the patient, that it is not to be wondered at that local anesthesia is gaining so rapidly in popularity. Not only should local anesthesia be used in Cesarean section when a general anesthetic is contraindicated, as in eclampsia, nephritis, placenta previa with severe hemorrhage, etc., but it should be used in cases of contracted pelvis, obstructive tumors, etc., where the patient's general condition is excellent.

The advantages of local anesthesia in Cesarean section are many. First of all, and the most important advantage is that novocaine is the safest anesthetic we know of. Large amounts of a .5 per cent or a .75 per cent solution of novocaine may be injected without producing toxic symptoms. As much as sixteen ounces of a .75 per cent solution has been used in one infiltration, and still larger amounts may be used if necessary without any untoward effects. Novocaine produces no circulatory, renal or pulmonary strain or complications. In pregnancy the kidneys, heart and other organs are already taxed, often to the limit, and are frequently diseased. Why tax them still more up to or above the breaking point by administering a general anesthetic when anesthesia can be obtained satisfactorily without increasing the burden of these organs?

Post-operative pneumonia after local anesthesia is an extremely rare condition. The pulse rate instead of being accelerated to 100 or over, remains at 80 after an abdominal section.

Local anesthesia reduces the shock to both the mother and the baby. Its use necessitates greater care in handling the tissues, thereby reducing trauma and resulting shock, post-operative pain and ileus. All unnecessary haste in performing the operation is eliminated. We know that undue "haste makes waste," and the blame of some of our untoward results can be laid at the door of "too much speed." Recently an article appeared in one of the journals in which the author prided himself because of the fact that he had reached the stage in which he could do a Cesarean section from beginning to end in less than ten minutes. This speed may be desirable in certain cases when a general anesthetic is used, but entirely unnecessary when using local. After the uterus is exposed, it may be incised and the child delivered in just as short a time under local as under general anesthesia. This is the only step of the operation that needs to be hurried along. If unnecessary haste is used from the time the abdominal incision is made until the final skin suture has been placed, the tissues are needlessly traumatized, resulting in more or less shock, post-operative pain and ileus. If it is shown that local anesthesia reduces shock in the mother, it is logical to believe that the shock to the infant is also decreased. As yet no toxic manifestations of the novocaine have been observed in the baby.

Post-operative nausea and vomiting, a great source of discomfort to the patient, is usually entirely avoided. The absence of vomiting also eliminates the strain put on the abdominal incision with its resulting pain and danger of breaking the sutures.

My associate, Dr. M. E. Rose,[1] in a series of observations on the alkaline reserve of the blood in thirty-eight patients operated on under local anesthesia at the Farr Clinic, came to the conclusion that the decrease in the alkaline reserve of the blood was less frequent and less in degree after novocaine than after ether anesthesia. This is a factor which perhaps has received too little attention by surgeons. It is a fact, which has been brought out by a number of investigators, that ether most always lowers the alkalinity of the blood, sometimes to the point of an acidosis, and this chemical change in the blood possibly accounts for some of the very unpleasant and distressing post-operative symptoms. After a novocaine anesthesia, as Rose's work tends to show, there is a lesser tendency to the development of an acidosis, and this, of course, favors a more peaceful convalescence and ultimate recovery of the patient.

If the patient is given a small dose of morphin and scopolamine an hour before the operation, and this dose perhaps repeated in a half hour, her memory sense will be deadened so that she will not remember even the trip to the operating room, or what occurred after she arrived there. After the patient is returned to bed, she will usually drop off into a natural sleep lasting from four to eight hours. To relieve dryness of the oral membranes and thirst, and to replenish the vascular system with fluid, the patient may be given immediately after operation an enteroclysis of three quarts of tap water at 100° F., to which four drachms of sodium bicarbonate have been added.

Farr,[2] of Minneopolis, has devised a pneumatic

1. Rose, M. E.; Illinois Medical Journal, January, 1922.
2. Farr, R. E.; American Journal of Surgery, April, 1920.

injector, automatic retractors, and other devices, and a special technic which have proven to be great adjuncts in promoting efficiency in the use of local anesthesia in major surgery. He has also suggested certain strategic methods while operating which coincide with the demands of local anesthesia and the best interests of the patient.

Technic of Operation. Cesarean section can be performed as easily and painlessly as can an inguinal hernia under local anesthesia. A .75 per cent solution of novocaine in normal salt is used, to which four drops of a 1 to 1000 fresh adrenalin hydrochloride solution to the ounce of novocaine is added. If possible, the operation should be performed at an appointed time, a day or so prior to the onset of labor. When the operation can be performed at a fixed time, the patient should be prepared exactly as for an ordinary abdominal section. On the night before, after the patient has received a full bath, the abdomen should be shaved, disinfected, and covered with a sterile dressing. The bowels should be evacuated by an appropriate cathartic, and an enema given a few hours before she is put upon the table. The bladder should be catheterized just before the patient goes to the operating room. I give two hypodermics before operation. The first one, consisting of ⅛ gr. of morphin and 1/100 gr. of scopolamine, is given one hour before operation. One-half hour before going to the operating room the second is given, consisting of 1/150 gr. of scopolamine. The small single dose of morphin will not cause asphyxiation of the child (blue baby). The patient reaches the operating room in a drowsy condition, but is entirely conscious, and will answer all questions intelligently. As little talking, noise, and disturbance as possible should prevail in the operating room. It is very important that the patient is made as comfortable as possible upon the operating table.

In addition to the operator, two assistants are needed, and a competent person should be charged with the reception and care of the child, one who should know how to resuscitate it if necessary.

The infiltration of novocaine is made carefully and slowly for a distance of 16 to 18 centimeters in the linea alba about two-thirds below and one-third above the umbilicus. A ten c.c. Luer syringe with a 3½-inch, 22-gauge needle is used, although the pneumatic injector used by Farr greatly simplifies making the infiltration. About four ounces of the novocaine solution is usually necessary for thorough infiltration, which requires from three to four minutes' time.

As the incision into the abdominal wall is made, a nurse gives the patient an ampule of ergotine intra-muscularly. Due to the adrenalin in the solution, there is practically no bleeding in the abdominal wall. The uterus is carefully and slowly delivered through the abdominal opening, if the old classical operation is performed. If this is hastily done, the patient will experience unnecessary pain. The edges of the abdominal incision are clamped together behind the uterus with towel clips, and sterile towels are placed behind and on each side of the uterus, to avoid all possibility of contaminating the peritoneal cavity. In many cases it is unnecessary to deliver the uterus through the abdominal incision. This is especially true when the cervical operation is performed.

One assistant now grasps tightly the broad ligaments on either side of the uterus, which he holds until the uterus has been sutured to reduce to a minimum the loss of blood. The uterus is not sensitive to pain and need not be injected with novocaine. A longitudinal incision is made through the anterior surface of the uterus along its middle line 16 to 18 centimeters in length. The membranes are ruptured, and the child is seized by one foot and rapidly delivered. The cord is cut between two clamps, and the child handed to the person in waiting for it. Immediately after the delivery of the child, the uterus contracts down, and the hemorrhage practically ceases. The placenta and membranes are peeled off, and removed by hand, care being taken not to leave any shreds of membrane behind. As soon as the placenta has been delivered, the nurse gives the patient an ampule of pituitrin subcutaneously.

The uterus is sutured with three rows of sutures, all continuous. Interrupted sutures are not used because of the many knots which necessarily have to be tied, and which may prove to be the source of trouble later on. The first two rows of sutures of chromic catgut include the muscularis, avoiding the decidua. The third row of plain catgut inverts the other two rows, and is taken through the sero-serous layers only. Any blood which may have escaped into the pelvic cavity is carefully sponged out and the abdom-

inal wound is closed in separate layers in the usual manner without drainage.

The patient is put in the low Fowler's position to facilitate drainage from the cervix. Occasionally when the operation is undertaken before the onset of labor, the cervix is so rigid as to prevent free drainage, and an accumulation of lochia in the uterine cavity results. In this case it may become necessary to dilate the cervix artificially.

CONCLUSIONS

1. Local anesthesia should be the anesthetic of choice for all cases of Cesarean section, instead of being reserved for cases in which a general anesthetic is contraindicated.

2. The interest of the patient should be the main consideration in the choice of an anesthetic.

3. Novocaine is the safest anesthetic known at the present time.

4. By using local instead of general anesthesia the patient's post-operative discomfort is greatly lessened, convalescence is shortened, and the tendency to complications reduced.

5. With the proper equipment and technic, the time of the operation is not greatly increased.

6. Cesarean section can be as easily and as painlessly done as a hernia operation under local anesthesia.

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DISCUSSION

Dr. R. E. Farr, Minneapolis, Minn.: Dr. Roos has gone over the subject systematically and leaves not very much that one might add. I take issue with him in nothing and I can only try to accentuate some of the things he has said.

My observation leads me to believe that local anesthesia is rapidly replacing general anesthesia and is limited in major surgery only by the ability of the surgeon to use it effectively and successfully. That is my observation. Again, I believe men use local anesthesia as a matter of choice provided it can be used successfully. Otherwise, why, I ask you, would it be used in hernia operations as a matter of choice all over the country unless this is true? Because the hernia patient is usually about the best surgical risk in major surgery, and still men use local anesthesia in these hernia cases, not because it is necessary but because it is efficient.

I agree with Dr. Roos that with proper technic a Cesarean section, with which I have had a rather limited experience, can be performed as painlessly and as successfully as can an inguinal hernia operation. In the work upon the abdomen we are depending largely upon infiltration and we believe in making that so thorough that we will destroy the reflexes of the abdominal wall and avoid the expulsive effort, which after all is the condition which prevents surgery under local anesthesia from being successful. When we fail in abdominal surgery, pain, vomiting and an expulsive effort through reflex action of the abdominal muscles are the cause.

If the uterus is to be delivered, which is unusual, we use a long sponge, laying it beneath the uterus, letting the uterus come out, opening it and slipping the sponge behind the uterus. It sometimes acts as a constrictor or as a retractor. The expulsive effort should not be so marked as to necessitate holding the intestine within the abdomen. Spinal anesthesia is the only anesthesia except general that will allow this. With the cooperation of your patient under these conditions one has practically an autopsy operation. The advantage of local in the extreme cases of Cesarean section it seems to me should be admitted by all, but unless we use it in a great many of the cases that are not so extreme we will be hurried and troubled in the extreme cases on account of lack of knowledge of the technic which we might gain by using it in the simple cases.

Dr. E. P. Sloan, Bloomington: There are few points left to speak of because the essayist has covered the ground rather fully, especially the technique of the operation with local anesthesia. The two operations in which local anesthesia worked very nicely are hernia and Cesarean section. They are about the easiest large operations to do under local anesthesia. I think many doctors have the wrong idea about the relative gravity of the Cesarean and other obstetrical operations until after they have performed one Cesarean. I am sure that most operators have had my experience and been surprised at the ease with which the operation is done. From what one usually hears of Cesarean section you would think it to be a very difficult operation always followed by adhesions, attended with great danger, and that a great deal of paraphernalia is necessary to do it. I have done Cesarean section out in the country under the most primitive conditions and many times I have been most certain that the patient would have infection, but she didn't. They tell you about the danger of the leakage of the amniotic fluid into the peritoneal cavity, of opening the uterus down upon the placenta, and of a great many other dangers. I believe that all of these mistakes have occurred in my experience and yet the patient got along all right. I have opened 27 abdomens on which Cesarean section had been previously performed, and in not a single one had we found adhesions that amounted to anything. After hearing all my life about the danger from adhesions following this operation, this was one of the most striking features of these cases.

I think every medical student and young doctor should know the truth about the advantage of Cesarean section. I am sure that any doctor with a young wife would prefer Cesarean section to a high forcep operation with laceration of the cervix, permanent dilatation of the vagina and at least partial destruction of the perineum, when the Cesarean section can be as safely performed as they are now.

Dr. Joseph B. De Lee, Chicago: We all agree that

if it were possible to do all Cesarean sections under local anesthesia it would be by all means desirable. There are a great many points in the original paper which could form the subject of discussion; that is in the matter of his method of operating, but as I understand it this is really not the subject for discussion. The subject is local anesthesia. To discuss all the points of the operation and the technic would lead us too far. I might mention one point, however, that is the use of local anesthesia in low cervical Cesarean sections. Perhaps a few of you know that I have been trying to get the doctors, surgeons, gynccologists (and obstetricians incidentally) to do the low cervical Cesarean section instead of the old classical Cesarean section, and we are beginning in the cities now to see some results. The rcasons that led me to invite the doctors to do the low cervical Cesarean were the very ones which Dr. Sloan so slightingly refers to. I might say I take a diametrically opposite position to Dr. Sloan. Dr. Sloan did not discuss the original paper which was on anesthesia; he devoted his argument to telling about the safety of Cesarean section. I deny that Cesarean section is so safe as he indicates. I believe that a certain part, how large I cannot say, of the high mortality of women in the United States—and the United States, according to statistics of other countries of the civilized world is fourteenth on the list of maternal mortality—is due in part to the frequent performance of Cesarean section. There died in the city of Chicago last year, 1921, twenty-one women following Cesarean section. Now if it is impossible to infect these women, as the speaker has said, why did these twenty-one women die? They did not all die of eclampsia because I was present at the autopsy of some of them. To teach the young men entering practice that Cesarean section is so safe is to start a destruction of women. I personally know that the most careful and conscientious obstetricians have lost women from Cesarean section.

As far as adhesions are concerned, I have seldom opened an abdomen after Cesarean section has been performed where I have not found adhesions. As I said in the beginning, that is the only part I am going to discuss.

My objections to local anesthesia in Cesarean section are really very few. The patients object, however. We find it less useful than we would like. In nervous women the idea of an operation like that without anesthesia appalls them and even though they complain of very little pain, the nervous tension and excitement defeat the purposes for which we are striving. This is particularly true of the Russian Jewess. We have found it practically impossible to do a Cesarean section under local anesthesia on these women. A good stolid Bohemian or Pole or a highly cultured American woman who has learned to control her nerves is the best subject.

We would like to use local anesthesia in many heart cases, but after using it in four or five I have come to the conclusion that the excitement and the strain of local anesthesia are often more dangerous to the patient than a general anesthesia. In nephritic cases, probably because the woman is so toxic that the tissues are benumbed, we have used it with success. However, we have found that the straining and vomiting are worse than during general anesthesia.

I have done twelve Cesarean sections under local anesthesia, two of the low cervical variety. I do not insist upon local anesthesia though I try to get the women to let me use it. I begin sometimes six weeks before labor to educate them to the advantages of local anesthesia and to try to get their minds trained. We had one case that developed pneumonia after local. It was not a bad pneumonia. I must say we have had more pneumonias after general. If I could follow out Dr. Roos' suggestions in all cases of Cesarean section I would certainly use local. Local anesthesia can also be used for the low cervical Cesarean operation which I am trying to introduce.

Doctor E. P. Sloan, Bloomington, Ill.: Perhaps I did not make myself clear in regard to fine surgical appliances. I did not refer particularly to the local apparatus. I wish to say that Doctor Farr has the most efficient local apparatus that I can conceive of, and I recommend it most highly to those who can procure it. I did mean to say that all of the facilities and assistance and appliances that are provided in an up-to-date hospital can be dispensed with and yet the operation be a success. The case that really requires Cesarean section is sometimes out in the country where you do not have all the facilities which you ought to have. But the operation can be performed even under such conditions quite successfully.

Of course every man differs in regard to his idea of the seriousness of operation. Any operation is serious. I tried to make a comparison between difficult forceps operation, with its usual laceration of the cervix, vagina, pelvic ligaments, and perineum, with simple Cesarean section. I believe Cesarean section under such conditions is far safer than a difficult forceps operation with the trauma that goes with it.

Dr. E. C. Roos, Decatur (closing the discussion): My paper was written as a plea to make local anesthesia the anesthesia of choice for Cesarean section.

I want to thank Dr. Farr, Dr. Sloan and Dr. De Lee for their very able and complete discussion of the subject.

Dr. Sloan said that one did not need a complicated apparatus in making the infiltration of novocaine. This is true, for all that one needs is a glass syringe and needle. However, if we have an injector at hand which helps us in our work, and which cuts down the time of administering the anesthetic, I think we ought to make use of it.

I agree with Dr. De Lee very heartily that Cesarean section is a very serious operation, even though the technic of the operation is easy. The danger which the patient undergoes during Cesarean section, however, makes it a serious operation, and therefore, I think that every opportunity should be taken to cut down the mortality rate. This we do when we use local instead of general anesthesia.

I was glad to hear of Dr. De Lee's experience with local anesthesia in his low cervical operation. I have as yet not done the low cervical operation which he advocates, but I am very much interested in it.

EXPERIENCES WITH NON-SURGICAL DRAINAGE OF THE GALL BLADDER*

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In the past three years the interest of the internist and surgeon has been attracted to a method intended as an aid in the diagnosis and a valuable therapeutic measure in gall bladder disease.

Einborn[1] has shown that it was possible to collect bile from the common duct and from the liver by means of the duodenal tube. Meltzer[2] while working with magnesium salts, noted that magnesium sulphate in a 25 per cent solution, if applied to the duodenal mucosa without first passing over gastric mucosa, would cause a relaxation of the tonus of the intestinal wall, thereby relaxing the sphincter of the common duct, and cause ejection of bile into the duodenum. He offered the suggestion that magnesium sulphate administered through the duodenal tube, in cases of jaundice and biliary colic, may relax the sphincter of the common duct and permit the ejection of bile into the duodenum.

Lyons[3] adopted the suggestion of Meltzer, and noted that he was not only able to obtain bile from the common duct, but that he was able to collect and distinguish the bile from the different parts of the biliary apparatus. Thus he described the light yellow bile first obtained as coming from the common duct and called it A bile. B, or gall bladder bile, is viscid syrupy golden yellow and varies in amount from 20-30 cc. and C bile is the light yellow, transparent-limpid coming from the hepatic ducts. In pathological conditions of the gall bladder the appearance and character of the bile are altered and it is by a study of the changes in bacteriology, cytology and chemistry that a more definite idea of the state of the gall bladder is obtained.

Thus in inflammation of the ducts, the bile first obtained is described as more viscid, flaky and mucus containing pus cells, epithelial, red blood cells and pathogenic bacteria. In cholecystitis, the gall bladder bile or B bile is described as viscid, dark, molasses yellow, flaky mucus fluid, showing the presence of red cells, pus cels, and desquammated epithelial cells. In choleithiasis similar findings are present. Lyons, basing his view on his findings in a large series of cases, advocated this method as a diagnostic measure in gall bladder diseases and also as a rational therapeutic measure.

I wish to present my experiences with this method in a series of 22 cases in which I have made approximately 100 drainages. I am indebted to Dr. Richter and Dr. Schrager for referring cases for these studies.

The method used is a slight modification of the technique of Lyons. The patient is instructed to eat a light evening meal and to omit breakfast on the day of the test. The duodenal tube is then passed, the gastric residue removed and the gastric contents analyzed. Time is then allowed for the tube to enter the duodenum which usually takes from one-half to two hours. The presence of the tube in the duodenum is ascertained by aspiration of duodenal contents, which is a clear pearly grey fluid, alkaline in reaction. Bile may be found, and although some claim that this is not normal I have been surprised at its frequency. Having ascertained that the tube has entered the duodenum, either by analysis of the duodenal contents, or by fluoroscopy or by obtaining a sensation of tugging on gently attempting to withdraw the tube, 30-50 cc of a 25 per cent magnesium sulphate solution is injected into the duodenum via the tube. Instead of 25 per cent solution, I have used a 33 and 50 per cent solution. A response is usually obtained in five minutes; the magnesium sulphate is reaspirated, stained with bile, and then the various samples are obtained as indicated. I have not attempted to "sterilize" the stomach or duodenum previous to installation of the salts. It seems to me that the mechanism of this phenomenon, is surely a physiological reflex—due to stimulation of the intestinal mucosa. The fewer stimuli introduced the greater the possibility of obtaining a definite reflex action. Further it does not seem logical to make interpretation of the bacteriology of biliary contents obtained in this fashion, because, I believe it is practically

*Read before the West Side Branch of the Chicago Medical Society.

impossible to render the stomach and duodenum free from bacteria in spite of all lavages and antiseptics. I have confined myself chiefly to a study

1. of the gross appearance of the bile obtained and to its cytology as revealed by microscopic examinations;
2. to the factors and substances which will cause this flow of bile;
3. to the diagnostic and therapeutic value of this method.

In the course of these examinations, I have used in addition to magnesium sulphate, 2 per cent hydrochloric acid, water, peptone, atropine, the tube itself. My experiences lead me to believe that these substances give rise to a similar response as obtained with $MgSO_4$. However, it must be noted that the quickest and more lasting response is obtained with $MgSO_4$. A response is very readily obtained with atropine. Water, Hcl, and peptone produce fairly good response, but the latter is open to objection as its pale yellow color interferes with recognition of the gross character of the bile. The duodenal tube itself or rather the bulb is sufficient stimulation to cause relaxation of the sphincter and thus drainage. It is important, therefore, to emphasize the lack of specificity of any particular substance.

Analysis of Cases. I shall first present those cases which have been operated on, since they have served as a check on the results obtained. In *3 cases* I was only able to obtain A bile and C bile, that is, bile, the characteristic of which resembles that coming from the common duct and from the hepatic duct—but none from the gall bladder. In all three instances the A bile was not clear, and contained many red and epithelial cells. As no gall bladder bile was obtained, I ventured the diagnosis of obstruction of the cystic duct. Operation in one case revealed stones filling the gall bladder and in two instances stones in the cystic duct and in one of these an obliterated cystic duct. In case No. 4, I obtained the definite A. B. C. sequence of bile as already described. This bile showed definite evidence of infection grossly and microscopic and a diagnosis of cholecystitis was made. Clinically this patient was an apparent case of early cholelithiases. Operation revealed stones in the cystic duct. In two instances bile was obtained without any stimulation and as soon as the tube reached the duodenum. All specimen obtained showed alteration grossly but normal sequence of different bile was obtained. The first time this occurred, I was inclined to doubt the presence of any lesion in the gall bladder except a possible infection. Operation revealed stones filling the gall bladder and a very dilated common duct. In the second case, when I obtained a similar result, there was no change in the size of the duct and only one large soft stone was found. In three (3) other cases which were operated on, drainage by the duodenal method revealed in one instance: a definite A. B. C. sequence but there was gross and microscopic alteration of the A and B bile and diagnosis of cholesystitis was made. Operation revealed normal gall bladder and a chronic appendix. In another case bile was obtained in normal A. B. C. sequence. No gross or microscopic alteration in bile was found. Cholecystitis was diagnosed at operation and the gall bladder was removed. In the third case, in which one year previously a surgical drainage of the gall bladder had ben performed, bile obtained by the duodenal tube showed gross and microscopical change in A and B bile with pus, mucus, and epithelial cells. Cholecystitis was diagnosed. At operation a large thickened gall bladder with adhesions was removed.

Cases drained by duodenal method which were not operated on. The normal A. B. C. sequence with no definite changes in cytology were the results obtained in six other cases in which a lesion of the gall bladder was suspected. In two of these gastric ulcer was final diagnosis; in two others, the gall bladder symptoms were referable to disturbances in the pelvis; in the remaining two cases no diagnosis was made.

Cases treated by duodenal drainage. One case of catarrhal jaundice was drained by duodenal method on alternate days. After three such drainages patient was relieved of jaundice and left the hospital in a period of ten days. A big woman with an emphysema and myocarditis who had had a cholecystotomy six months previously returned complaining of gall bladder symptoms. The surgeon requested medical drainage, which was done four times on alternate days. The A. B. C. sequence was obtained: the B bile was green, with large amount of mucus and epethelial cells.

Relief was obtained following each drainage. In two cases in which cholecystectomy had been done a number of years ago, the patients complained of pyrosis, pain after eating and recurrence of previous symptoms. In both cases A and C bile only were obtained. Relief was obtained for a short period following each drainage. A case of acute cholecystitis occurring in a patient during the puerperium. Drainage was made but no definite action was obtained. One case of cholelithiasis in a man past middle age with a bronchial asthma and myocarditis. By medical drainage of gall bladder, I have obtained A and C bile and only a very small amount, about 2 cc, of B bile which was very dirty green mucus in character. Have drained this man four times. He feels better after each drainage so that he is now using the tube, taking it himself once a week. He states that the attacks have diminished in frequency.

DISCUSSION

In presenting these cases, one may at first be inclined to be rather optimistic as to the diagnostic value of this method. I wish to emphasize, however, that this method is subject to error depending largely on the technique employed. For diagnostic purposes it is necessary to watch very carefully for the transition from A bile to B bile to C bile and to separate each at the proper time. This is difficult at times, particularly, if drainage is done by gravity instead of suction by means of a syringe (the latter method is not advisable inasmuch as there is danger of traumatizing the duodenal mucosa). Further the differences in cytology of the various specimens is so small that it is questionable whether it can be said that the pathology is limited to one portion of the biliary passages. It seems to me that if any differentiation can be made it must be on the gross characteristics of the bile. It is possibly hoping for a little too much in the refinement of diagnosis. However, this method is a valuable means of confirming the diagnosis of gall bladder disease, particularly, in such instances where the clinical diagnosis is in doubt. It is true that the ordinary case of gall bladder disease is easily recognized clinically and yet, it is a surprising fact that the physical findings may be entirely absent. The history in gall bladder disease is often the only guide and when this together with other laboratory tests are absent, the clinician has had no other aid. This method, therefore, should be recognized as a valuable measure in confirming the diagnosis of gall bladder disease.

As a therapeutic measure this method has opened a new avenue in the treatment of gall bladder disease. The essential factors underlying gall bladder pathology are, stasis of bile, biliary concentration, and infection. Treatment, surgical and medical, aims to eradicate these factors. Drainage by the duodenal tube offers a means of treating all factors at once without impairing the physiology of the tissues. Furthermore, this method offers a pharmacological as well as a physiological stimulus to the biliary secretion in the form of magnesium sulphate, water and peptone. The objections to this method, are purely of academic interest. It makes very little difference what drug is introduced in the duodenum as long as that drug is capable of exciting the reflex action which will cause the sphincter to relax and the gall bladder to contract. Drainage once accomplished, stasis of bile and infection is overcome. Therefore early and repeated medical drainage of the gall bladder is advocated. It should be employed particularly in the so-called cases of infective duodenitis and catarrhal inflammation of the biliary passages. In those individuals who present themselves complaining of vague gastric symptoms, or in those uncertain cases usually termed dyspepias and bilious states. In early cases of acute cholecystitis, and the cholecystitis of pregnancy, and in the biliary stasis which is said to follow pregnancy. Medical drainage in such selected cases cannot only accomplish results of surgical drainage but will prevent future gall bladder disease. This method should also be used in those cases of cholecystectomy with recurrent symptoms and in those individuals who present symptoms of gall bladder disease but who are poor surgical risks because of a complicating myocarditis or pulmonary lesion. Summarizing very briefly, these experiences lead me to believe:

1. That non-surgical drainage of the gall bladder is and should be used as an aid in the diagnosis of gall bladder disease but should not replace the clinical diagnosis.

2. That its diagnostic value is greatest in infections of the gall bladder.

3. That the drug employed in non-surgical

drainage is only of material interest, in so far as it helps to stimulate a normal physiological reflex. Further this reflex can be accomplished by the tube itself.

4. That non-surgical drainage of the gall bladder should be used in the treatment of early cases of gall bladder stasis, cholecystitis, cholangitis, catarrhal jaundice. Post operative cholecystitis and recurrent cases with gall bladder symptoms after cholecystectomy and cases which are a poor surgical risk because of myocarditis, emphysema or other pulmonary lesion.

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REPORT OF A CASE OF SYPHILIS OF LUNGS, WITH REVIEW OF REPORTED CASES*

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Virchow's[1] statement that "some patients die of so-called pulmonary tuberculosis for lack of antisyphilitic treatment" seems not to have received the attention that it deserved. Within the past few years a considerable number of reports of cases have appeared in the medical journals and practically all of the writers have mentioned the importance of keeping in mind the possibility of syphilis in cases of chronic pulmonary disease when the bacillus of tuberculosis cannot be demonstrated after repeated attempts, particularly if there is a history of luetic infection, other evidences of the disease, or a positive Wassermann. If the prognosis is bad in untreated cases, the results are excellent if antisyphilitic treatment is instituted early, particularly in uncomplicated cases.

The following case has been under the observation of Dr. T. A. Johnson, Dr. Shipley and myself during the past three years, and as there has been no return of the pulmonary trouble to the present time, the case is reported as one of pulmonary syphilis, although it is clearly evident that the ubiquitous bacillus of tuberculosis may be present, but if so the lesion must be inactive as no response was obtained to a tuberculin test and the sputum was negative to repeated examinations.

*Read before Section on Medicine, Illinois State Medical Society, Chicago, May 16, 1922.

History: First seen August 25, 1919. Female; age 29 years; white; married; occupation, housework.

Family History: Father and mother, three sisters and one brother, living and well. No history of tuberculosis, cancer, nervous diseases, or any other diseases.

Past History: Had what was called inflammation of stomach when fourteen years old; had an illegitimate child about ten years ago. Had tonsils removed in April, 1918. Had a miscarriage in March, 1918. Influenza in November, 1918. Does not know if she has had syphilis or not.

Present Illness: Frontal headaches and a feeling of feverishness have appeared at frequent periods lately. Since April, 1919, has coughed; has noticed that the desire to cough is more noticeable in the morning and when lying down. When in recumbent position on back has a peculiar wheeze in the throat. Has had night sweats the last four weeks. Pains in both sides of chest, although not severe, have been noticed for several weeks. Shortness of breath has been very marked since April, 1919. No expectoration of blood.

Examination: Eyes, ear, nose and throat examinations reveal nothing of importance. Abdomen: liver and spleen not enlarged; no masses felt. Glands: no enlargements. Limbs and joints: not painful, no limitation in motion. Reflexes: normal knee jerks; no ankle clonus; negative Babinski. Skin: no eruptions. Chest: heart slightly enlarged, P. M. I. 10 cm. from mid-sternal line; no organic murmurs heard. Pulse normal in rhythm, force and frequency.

Lungs—Inspection: On deep inspiration lagging is noticed on left side; Litten's sign is absent on left side, while present on right side. Palpation: Chest does not move as freely on left as right side. Normal vocal fremitus on right side, but is increased on upper part of left chest in back above scapula and to inner side of scapula, but absent at base.

Percussion: Normal percussion note over right lung and over upper lobe of left lung in front. Impaired percussion note over whole left lung in back, in axillary region, and over region of lower lobe in front.

Auscultation: A few fine crepitant rales heard over upper left lobe in back and numerous crepitant rales heard over lower lobe in back and front. Bronchial breathing heard over small area to inner side of scapula at level of spine.

Sputum negative for tubercle bacilli and elastic tissue. Blood Wassermann, four plus.

X-ray: Shadows indicative of a pathological process present in left lower lobe. Slight cardiac enlargement. Evidence of small quantity of fluid in left pleural cavity. A needle inserted in left side in back reveals the presence of a small quantity of clear serous fluid; 10 c.c. removed. The small quantity remaining was not aspirated. Miroscopic examination showed lymphocytes to be the predominant cells present. No causative organism could be found.

This patient was given six injections of neoarsphenamin followed by mercurial intramuscular in-

jections. She improved markedly at end of first week after beginning of treatment, cough and pain disappeared. She gained in weight and after completion of injections the rales and fluid had vanished, but, feeling well, she failed to carry out the treatment outlined. She got along nicely until about fourteen months ago, when she had a severe attack of pain in the left side while at work, with symptoms of collapse. No lung disturbance that could explain her syncopal attack could be found. A markedly enlarged heart was demonstrated, and undoubtedly an acute dilatation had occurred. As she still had a positive Wassermann, she was given another course of neoarsphenamin injections with good results. This is being followed by mercury and iodides. She is now feeling very well.

This case is of especial interest because of the associated cardiac lesion which evidently is of a myocardial nature. It seems that the pulmonary artery and its branches are especially prone to sclerotic changes and at times a remarkable combination of symptoms, the most characteristic of which are myocardial insufficiency with hypertrophy and dilatation of the right heart are present. Warthin[2] has pointed out the resemblance of this condition to Ayerza's disease or cardiacosnegros.

In an analysis of thirty-five reported cases the following points of interest were noted. Fourteen were females and twenty-one males; eighty per cent. were 35 years of age or over. Fifty-four per cent. recovered and forty-six died. This high death rate is explained in part by the fact that in several the diagnosis was made at the postmortem; and others were suffering with complications as nephritis, and cardio-vascular involvements. In uncomplicated cases the results following anti-syphilitic treatment were excellent. The interval between the infection and appearance of pulmonary symptoms varied from one year to twenty-five years, the majority stating that the infection took place ten years or more previously.

Associated lesions or disorders having occurred previously in the history of the patient are bone lesions as tumors of the parital bone in one case and periostitis of fibula and tibia and miscarriages in two cases; transient blindness in one case, ulcer of pharynx and uvula each one; perforation of soft or hard palate five cases; perforation of nasal septum two. Tumor of testicles, aneurism of the aorta, and gumma of lips are also mentioned.

The lower lobes or middle lobe are the most frequent sites of the pulmonary involvement with a predilection for the right side and as to the extent of the involvement there is every gradation from a small gummatous nodule to the involvement of a whole lung and part of the other lung; but the spirochetal infection is far more likely to be localized in one lung or lobe than is the tuberculous infection. In ten cases pleurisy was present and of these, four were accompanied by fluid. Chelmicki[3] states that pleurisy is the most common complication of pulmonary lues. Other complications mentioned are scoliosis, curvature of the spine, ascites, hypertrophy of heart, aneurism of aorta, purulent bronchitis, nephritis, ulcer of tonsils, osteitis of cranium and vicarious emphysema. In one case a blow to the chest seemed to precipitate the onset of pulmonary symptoms.

Symptomatology: The difficulty of making a positive diagnosis of syphilis of the lung is well recognized. Strumpell[4] says no definite clinical description can be made. The ever-present tubercle bacillus renders it impossible to rule out of consideration a tuberculous process; moreover, the syphilitic seems to be predisposed to tuberculosis, as shown by Christian's[5] experiment. He inoculated two guinea-pigs with blood of syphilitics in the secondary stage, then injected them with tubercle bacilli, with the result that they died more quickly than the controls. Streffed has observed that the longer the interval after the chancre the milder the tuberculosis when it develops, but when tuberculosis is added to a recent syphilitic infection the course is usually rapid. However, as Stanley,[6] Chelmicki, Lisser[7] and others have pointed out, there are certain signs and symptoms that, when present, justify the diagnosis of syphilis of the lung, or at least demand anti-luetic treatment as urgently as do certain symptoms and findings, treatment for tuberculosis, before the appearance of the tubercle bacillus in the sputum.

These patients are usually around middle age and may give a history of having had a primary infection some years before. Many give a history of dyspnea usually dating back for some period of time. So common is this history that it is really of some significance, particularly if it occurs in a patient who does not present the appearance of being especially ill. This shortness of breath may be present with or without exertion. At times it may partake of the character of an

asthmatic attack. Chelmicki states that in his opinion this is due to the narrowing of the larger and smaller bronchi as well as the alveoli. This may be a real stenosis or due to an increase of connective tissue or to enlarged glands.

Cough, the result of a tracheal, laryngeal or bronchial irritation, usually occurs early and may be severe or slight, and at times spasmodic. The character of the sputum presents nothing of real significance aside from the presence of elastic tissue in case of tissue destruction. Tubercle bacilli are absent. A history of hemorrhage may be obtained, but this is not so likely to take place as in pulmonary tuberculosis. Another symptom may be loss in weight, but several reports speak of the remarkably healthy appearance of many of the patients considering the extent of the pulmonary lesion. Various reports indicate that a luetic lesion will not produce the same systemic results or have the same toxic effects as a tuberculous lesion of the same extent. Possibly Fournier's[8] observation may explain in part the difference in the early symptomatology of the two diseases. He states that mediastinal adenitis is almost always absent in early lues, but constant in tuberculosis; as a result the reflex action of the pneumogastric is not excited and the usual symptomatology of early tuberculosis is absent. The course is more slow and insidious than tuberculosis, and considerable destruction of tissue may take place before symptoms develop.

A systematic general examination is another improtant procedure to be observed. Small irregular areas of alopecia, rigid pupils, nasal infections, or lack of knee jerks are signs which the patient frequently does not know the existence of, but which the physician will detect. In cases of impaired hearing it is important to ascertain the cause of the deafness. If the labyrinth is affected, it will lead at once to the suspicion that lues may be at the root of the trouble. In this connection Warthin's statement is of interest, namely, that next to the heart and aorta, the testes are the most frequent site of infection. As far as the chest is concerned, lagging on the side involved, impaired expansion and the other signs of impaired function so frequently seen in a tuberculous condition will be found. A thorough inspection with the eye open for abnormalities will pay for itself abundantly.

Palpation and percussion may help to reveal the site of the lesion. Statistics show that the majority of lesions in pulmonary syphilis are located at the base of the lung and are more likely to be unilateral. Several writers have found the lesion in the middle lobe. In a few cases it has been found at the apices. However, any chronic case with negative sputum, with a definite lesion at the base of either lung, and particularly if the lung findings are unilateral, should be regarded with suspicion and further evidence of lues looked for. An impairment of the percussion note out of proportion to the ausculatory findings of fibrosis is of importance.

As regards auscultation, Stanley mentions the progressive weakening of breath sounds as an important sign found in three of his cases. Bronchial breathing and crepitant rales are found in pulmonary syphilis as well as in pulmonary tuberculosis. Chelmicki mentions bronchial breathing which may be mixed with fine and medium rales at times ringing in character. Just as in tuberculosis, cavity formation, pleurisy with or without effusion, bronchiectasis, empyema and pneumothorax may take place. These conditions can be recognized by the usual methods. The most common complication, according to Chelmicki, is involvement of the pleura. This may take the form of a dry pleurisy or if wet, a serous, serofibinous or sero-purulent fluid may be present and later adhesions may form. Bronchiectasis is a condition which seems to be not at all infrequent in syphilis and when we recollect the frequency of stenosis in lung lues, the occurrence of this condition is not all to be wondered at.

The other complications of pulmonary tuberculosis due to secondary invaders may be seen in pulmonary lues also. Frieburg and Schmorl have both described a spirachaete in the sputum, but in neither case was it similar to the spirochaeta pallida in all points of resemblance. As far as I know the spirochaeta pallida has not yet been found in the sputum of a case of pulmonary lues. Spirochaetes of a different type from that of syphilis have been described occurring in lung gangrene. The spirochaetes at times found in the buccal cavity also have to be taken into consideration and still another type of spirochaete described by Castallani has been found in cases of lung involvement.

Enlargement of the liver and spleen may take place as a result of the syphilitic process, but this may also occur following other types of infection,

particularly suppurative processes, causing amyloid changes.

Diagnosis Absence of the bacillus of tuberculosis after repeated examinations in a patient complaining of pulmonary symptoms should throw the physician on his guard. A considerable number of parasites have been found to be the cause of disease processes in the lung, that should be kept in mind, particularly when the cosmopolitan nature of the population of this country is taken into consideration. The recent report by Mason[9] of a case of lung infection with the spirochaeta bronchialis of Castellani occurring in this country is of importance. This case was of especial interest because of the associated empyema, with the presence of spirachaetes in the pus. Castellani has found this infection to be not at all uncommon in the Italian army and described a chronic form at times lasting for years.

Pulmonary actinomycosis, norcardiosis, sporothricosis, aspergillosis, blastomycosis and coccidioidal granuloma should all be kept in mind, particularly actinomycosis. Mendelson[10] has recently published an article under the heading of "Tropical Broncho-Pulmonary Mycosis." His figures from the city of Bankok, Siam, are most interesting. Of 100 cases presenting themselves at a hospital for treatment for tuberculosis, 5 per cent. proved to be mycotic, 23 per cent. spirochaete infections and the remainder were classified as tuberculosis, although in only 10 per cent. could the tubercle bacillus be demonstrated. It would be interesting to see what the results would be in different sections of our own country if a systematic search were made for the causes of chronic pulmonary disorders, employing not only the microscope but cultural methods. Mendelson suggests that especially in the southern states it might be possible to find many cases of bronchopulmonary mycosis.

A few other pathological conditions have to be considered as echinococcus infection, amebiasis, pulmonary distomatosis, pneumokoniosis, primary tumors, and dermoid cysts.

Summarizing, it is seen that the different disease processes just mentioned, with the exception of tumors, pneumokoniosis and echinococcus infection, can be diagnosed by the microscope or by cultural methods, and at times the microscope will settle the diagnosis in case of the echinococcus cysts. In regard to the three exceptions, the x-ray will be of great help. Blood counts are not so reliable on account of the frequency of secondary invaders; however, it is said a marked leucocytosis may be found present in a coccidioidal infection. Eosinophilia may occur in cases of infection with animal parasites.

A tuberculin test or a complement fixation test is of help in ruling out tuberculosis where the bacillus is not present in the sputum. Animal inoculations will also be of help. All of these infections, with the exception of blastomycosis coccidioidal, granuloma and pulmonary distomatosis, show a preference for the base of the lungs. The primary tumors favor the root of the lungs. In regard to the three exceptions, I have not been able to find enough data to make a definite statement as to the most frequent localization.

With a positive Wassermann or a history of syphilitic infection, definite lung changes, particularly at the base, a history of pulmonary disturbance over some period of time, negative sputum, dyspnea, and a disproportion between the extent of the lesions, and the general appearance of well being of the patient, a presumptive diagnosis of syphilis of the lung is justified if the other conditions mentioned can be ruled out. This is strengthened by finding manifestations of syphilis elsewhere in the body.

CONCLUSIONS

1. Syphilis of the lung is probably not as rare as it is supposed to be.
2. It should be considered a possibility in all cases of pulmonary involvement where the causative agent cannot be demonstrated.
3. This possibility will be greatly strengthened by a positive Wassermann, a history of luetic infection, or the presence of syphilitic lesions elsewhere in the body.
4. These patients should be given antisyphilitic treatment, particularly as such excellent results are obtained in uncomplicated cases.
5. The prevention of this condition consists in (a) The prevention of syphilis. This problem Osler[11] has discussed comprehensively. (b) Proper treatment of all cases of syphilis at the earliest possible date and keeping these patients under observation for some time after.

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DISCUSSION

Dr. Manly Shipley, Rockford: I saw this case about fourteen months ago, a few months after Dr. Egdahl saw her. You will remember he said she had not carried out the treatment he recommended. This was characteristic of this individual. At this time she gave a history of a sudden fainting spell while she was washing the windows. How long she had remained in this condition she could not tell, but apparently it was about fifteen minutes. She said that since Dr. Egdahl had been taking care of her she had been feeling fine. There was no cough, she had a good appetite, worked every day and slept well. The physical findings were rather startling. The heart was enormously enlarged; the cardial dullness extended to 3 cm. from the mid-sternal line on the right to 5 cm. on the left, and the point of maximum impulse was about 10 cm. from the mid-sternal line. The heart sounds were booming. The sound was transmitted to the left axillary and left subscapular regions. The lungs were much the same as Dr. Egdahl found them. There was some retardation of expansion in the left upper lobe; the right was apparently normal. There were subcrepitant rales in the left interscapular space and at the base, but not at the apex. The x-ray picture showed the heart enormously enlarged. It was one of the largest hearts I have ever seen and there was acute dilatation. She had a 4+Wassermann reaction. The sputum was negative, as was the Von Pirquet. She received then intensive antisyphilitic treatment. She was kept in bed for about six weeks, first on mercury and potassium iodid, and then arsphenamin. Following this the condition began to clear up. At the end of six weeks the heart had gone down markedly in size, and I think would be similar to the appearance presented in the picture shown. Possibly a little less. The lungs cleared up; the rales disappeared, the patient felt fine and so far as I know she has been going along very well. I have not seen her for a few months.

One thing I wish to mention,—until recently it has been thought that lesions of the heart which were unmistakably attributed to syphilis were gummata, which is absolutely untrue. We know that the place of predilection for syphilitic lesions in the heart is the root of the aorta. Dr. Warthin, Brooks and others have done much work on syphilis of the heart and they have proved beyond doubt that it is possible to have invasion of the heart muscle. Out of forty-eight cases thirty-six showed involvement of the cardiac muscle. Out of fifty cases reported by Brooks, forty-four showed cardiac muscle involvement.

The point I wish to bring out is that this woman had an involvement of the cardiac muscle and she got along very nicely until due to over-exercise, she got an acute dilatation of the heart.

Dr. A. Egdahl, Rockford, (closing): I have nothing to add except that in cases of chronic pulmonary disease, when the bacillus of tuberculosis cannot be found a careful search should be made for other disease producing organisms. The more often they are searched for the more frequently they will be found. I have in mind a case of actinomycosis. The patient was a farmer's boy who had been treated for pulmonary tuberculosis for several months. Pus was found in a pleural cavity and drainage was performed. The pus evacuated showed actinomycosis to be the causative agent.

COMPLEMENT AND SYPHILIS, WITH SPECIAL REFERENCE TO THE BIOLOGIC ACTION OF ARSPHENAMINE AND MERCURY

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The clinical importance of complement and its profound influence upon the favorable or unfavorable course of infectious diseases is but little explored. This influence exists not only in acute microbic afflictions, as I have shown it to be the case in diphtheria[1], but it is all-important also in chronic diseases. Its study is highly interesting and most profitable from a clinical standpoint. This is true especially in syphilis. As we follow the complement during the progress of this protean, diabolic scourge, stamping, as it does, its characteristic and unmistakable marks upon most of the clinical events occurring during this disease, we cannot but wonder at the ease with

which seemingly impenetrable clinical puzzles find their explanation—and at the flood of light that is thrown upon the darkness that still veils the details of the struggle of our body against the spirochetal infection.

Relation of the Ferment to its Complement. However, before entering upon our chosen task, it seems indispensable to define once more the relative position in which the ferment stands in relation to its complement. Without a thorough knowledge of this relation the comprehension of the following explanations is impossible. But as this relative position has been expounded at length in previous papers[2], [3], we may dismiss the subject here by reiterating that the complement is to the ferment what the stick of dynamite is to the laborer who is bent upon blowing up stumps. As the laborer can blow up one stump after the other, if he has enough dynamite, so the same ferment can kill and disintegrate one microbe after the other, if it has enough complement. But when the complement is all consumed, the ferment, though potentially just as capable as before, can no longer kill microbes or disintegrate their body substance, just as the laborer can no longer blow up stumps, when his dynamite is finished.

The Three Immunity Equations. The killing of pathogenic microbes and the disintegration of their body substance or their poisonous split products into the ultimate non-poisonous fragments depends, thus, upon the co-operation of two factors: 1, the ferment; 2, the complement. Neither of the two can act alone, but both united constitute the most powerful and most rapid agency in existence to dispose of pathogenic microbes. Health, sickness, or death is conditional upon their relative united strength when balanced against the infesting foe that grips the body during the course of an infectious disease. This balance is shown in the following three equations:

Poisons vs. sufficiency of both antibodies and complement = no symptoms.

Poisons vs. relative insufficiency of either antibodies, or complement, or both=symptoms (local or constitutional).

Poison vs. absolute insufficiency of either antibodies, or complement, or both=death (local or general).

These three immunity equations are similar to those presented in a former paper[3], but they have here been changed so as to be applicable in all infectious diseases. They give the key to a ready and satisfactory explanation of most of those perplexing phenomena of infection and immunity that today still remain a puzzle. Their application in the case of syphilis may serve as an example and lead the way to show how these equations may be used to penetrate also the mysteries of the puzzling phenomena occurring during the course of other infectious diseases, and to suggest the remedies to successfully meet the situation.

The Poisons: Origin, Disposal and Character. The word "poisons" used in these equations must be taken in a broader sense and include also the body substance of microbes, as it is the substance from which the poisons are derived. These poisons are formed during the parenteral digestion of killed germs, while the body prepares them for excretion. They are removed and rendered harmless by being broken down, or disintegrated, into simpler, non-poisonous fragments —and in no other way. The so-called "antitoxins" that are supposed to neutralize these poisons, do not exist[3]. I have shown this to be a fact, I believe, conclusively. The disintegration is accomplished by ferments in conjunction with their complement. There is no other agency known that can accomplish this end within the body. It is most important to remember these points, as many conclusions are based upon them.

Furthermore, laboratory investigations have evolved the following facts: The unbroken molecule of bacterial protein is not poisonous. Nor are the end products of their digestion, the amino-acids, harmful. It is only a portion of their transient, intermediary fragments that does the mischief. Nor does the unbroken molecule of bacterial protein or the harmless end product, the amino-acid, absorb, or "fix," complement. It is again the transient, intermediary split product that is characterized by its great avidity for this substance.

Complement in the Primary Stage of Syphilis. Directly after infection the spirochetes begin to multiply rapidly and start on their journey to disseminate throughout the body. Louis Pearce and Wade H. Brown[4] found that in the rabbit 48 hours after the inoculation of the scrotum the inguinal nodes contain active spirochetes. They

were constantly present at that time, while at the side of inoculation nothing as yet was visible. In humans, enormous numbers have developed up to the time that the secondary symptoms spring into existence. These symptoms appear rather suddenly about the forty-fifth day after infection[5]. At the same time the Wassermann reaction becomes positive. Why this coincidence, and why the suddenness of the appearance of the syphilitic symptoms?

Elsewhere[6] I have shown that the specific symptoms of specific diseases, such as measles, smallpox and others, including syphilis, are caused by the poisonous intermediary split products formed during the parenteral digestion of killed specific germs—in this instance of spirochetes. In the prodromal stage of infectious diseases, before the appearance of specific symptoms, these poisonous split products exist only in a transitory condition and are broken down into non-poisonous fragments before inflammatory symptoms can develop.

This is true also in the first, or primary, stage of syphilis. Unquestionably, large masses of spirochetes are killed and disintegrated as the body cells become sensitized progressively and the production of antibodies takes larger and larger proportions with the continued dissemination of spirochetes. Under these circumstances, the lack of general specific symptoms and the still negative Wassermann reaction are possible only under the conditions given in the first equation, namely, if a sufficiency of antibodies and complement is available. No bacterial protein or its poisonous split products can exist in the presence of this powerful combination without being broken down immediately. But the ready supply of complement is limited. As the number of ferments grows and germs are killed in ever increasing numbers, the demand for complement mounts proportionately. Gradually, but unfailingly, there comes a time when this ready supply is exhausted. At this moment, the ferments, though potentially fully capable of further action, become arrested in their activity and leave their work unfinished. The poisonous split products can no longer be disintegrated. They now persist and exert their toxic influence. Those present within the tissues or the skin produce the well-known syphilitic lesions; those present in the blood turn the Wassermann reaction positive. As the positive Wasserman reaction is characterized by the unsatisfied complement avidity of the syphilitic blood, it demonstrates scientifically the existing insufficiency of complement and furnishes definite proof of the correctness of the foregoing explanations.

Complement in the Secondary Stage of Syphilis. Thus we see that the secondary stage of syphilis is ushered in by the exhaustion of ready complement, as characterized by the positive Wassermann reaction. It represents the conditions given in the second equation. The insufficiency of complement remains throughout this period. It is, however, only relative, because the tissues are able to come, in a measure, to the rescue and furnish at least a part of the necessary complement. In this way, some defensive action is effected. The total destruction of the involved tissues is forestalled and scar formation prevented.

In some instances, especially in the later stages of this disease, another cause may arise which prevents the disintegration of the poisonous split products and the perpetuation of the symptoms. This cause is shown in the second equation to be an insufficiency of ferments, which usually coexists with the insufficiency of complement. This lack of ferments is readily distinguishable clinically from the lack of complement, as we will see later, though the symptoms are the same.

Complement in the Tertiary Stage of Syphilis. As the supply of complement furnished by the tissues is gradually diminished and begins to fail, syphilis enters its third, or gummatous, stage. This stage represents the conditions given in the third equation and is characterized bio-pathologically by a total insufficiency of either ferments, or complements, or both—and clinically by the destruction of tissues, or local death, with scar formation. Clinically, differentiation between lack of ferments and lack of complement can also be made at the tertiary stage with the therapeutic test.

Biologic Action of Arsphenemine and Mercury. If we give arsphenamine or mercury in the proper form and quantity, for instance, during the early secondary stage, we find that the spirochetes rapidly disappear from the lesions. Just how the spirochetes are killed and removed is not known. A killing of the parasite directly by the

remedy is now generally admitted to be impossible. The bactericidal power of arsphenamine is very feeble in the test tube, and mercury is destructive to spirochetes only in a concentration in which it is also destructive to the body. A direct action of the specific remedies upon the invader is, thus, excluded. Therefore, the assumption is made that the drugs are activated by some agency in the body.

This agency is not known. However, in order to find it and to disclose the biologic action of arsphenamine and mercury the following consideration will be of service. If the remedies would simply kill the germs, we would find their dead bodies after the treatment at the lesions. This is not the case. The spirochetes disappear. Their disappearance must have been effected in the same way as Nature always and without exception effects the removal of dead microbes from the system: They are first digested and then the products of digestion are excreted. Therefore, the vanished spirochetes must have been killed and disintegrated by the existing specific ferments. But we have seen above that the activity of these ferments is arrested at the beginning of the secondary stage for lack of complement. If they resume their activity and kill and disintegrate spirochetes upon the exhibition of arsphenamine or mercury, they must receive complement in the form of these specific remedies. In other words, arsphenamine and mercury act biologically as complement. The same is true of the tartrobismuthate of potassium and sodium recently discovered by the French.

There is no reason to assume that the spirochetes must first be killed by the remedies before they can be disintegrated by the ferments. The same combination of ferment plus complement that digests the microbic protein also kills the microbe. Indeed, it is by far the most powerful germ-killing agency in existence. While antiseptics take minutes or hours to kill, the ferment with its complement takes but seconds. Its action is unfailing and so fast that—to use the expression of Vaughan—the microbes are dissolved "as sugar or salt in water."

The conclusion as to the biologic action of our specific remedies is supported by the following two laboratory experiments: 1. A concentrated solution of arsphenamine has only feeble bactericidal power in regard to spirochetes. If, however, a trace of liver substance is added, this solution begins to kill spirochetes at a lively rate. The liver is known to be extremely rich on ferments. Gram for gram it contains a concentration of ferments far greater than any other parenchymatous organ and many fold that dispayed by the blood serum.[7] By adding it to a solution of arsphenamine, we add the ferments that enable the arsphenamine to act in its capacity as complement. 2. If we add a trace of a mercurial solution to a Wassermann positive blood, the Wassermann reaction becomes at once negative. This sudden change occurs because mercury satisfies the complement avidity of the spirochetal split products. Consequently, the complement of the guinea pig's serum is no longer "fixed" when added to the mercurialized syphilitic blood and the Wassermann reaction is negative.

Additional proof as to the action of our specific remedies in the capacity of complement is furnished by the fact that in the absence of ferments arsphenamine and mercury become devoid of specific action. This happens in those instances in which our specific remedies make no impression in spite of the presence of active syphilitic symptoms. Among these active syphilitic symptoms must be included also the permanently positive Wassermann reaction in the so-called "Wassermann-fast" cases. If in those cases measures are employed which are known to promote the production of antibodies or to increase their activity, splendid results can frequently be obtained, unobtainable in any other way. The insufficiency of ferments is due either to constitutional deficiencies or, more often, to overdosing or injudicious drugging. Many a patient owes his Wassermann-fastness to these latter causes.

In concluding the proofs in support of the view that our specifics act as complement I wish to point to the clinical experience of many physicians who find that arsphenamine acts better when employed in small but often repeated doses than when used in large doses at longer intervals. The advantage of small but often repeated doses was emphasized recently at the congress of French dermatologists and syphilologists, at which the neurologists especially insisted upon this form of treatment as superior in older cases.[8] Considering our specifics acting as spirocheticides, this experience as to the greater efficiency of these weak concentrations seems incongruous,

while it is thoroughly within the limits of reasonable expectations if we grant that our specifics act as complement. Laboratory experiments prove that with complement strong concentrations are not necessary to insure satisfactory action of the ferments, but with antiseptics strong concentrations are essential and indispensable to insure efficiency.

Different Mode of Action of Arsphenamine and Mercury. Though both acting as complement, arsphenamine and mercury do not behave alike in the body and can, therefore, not substitute each other. Each has its own definite indications. However, the difference of their action does not lie in their nature as complement. It is due to their peculiar chemical qualities that determine their solubility and the speed with which they are distributed by the blood stream. A closer account of this difference is reserved for a later paper, when also the indications for the different remedies at our disposal shall find due consideration.

Clinical Considerations. As the above conceptions gain ascendency, many changes of the present management of our syphilitic patients will become imperative. It is difficult, however, to define now just what these changes will be. But one change seems to require our most earnest, immediate attention, namely, a change of attitude as to the indiscriminate and continuous repetition of antisyphilitic courses in the face of repeated failures. If we apply specifics, that is, complement intensively, judiciously and for a sufficient length of time without benefit in the presence of lesions or a permanently positive Wassermann, a careful analysis as to the cause or causes of our failures must first be made before proceeding further. If we do so, we will find that in the majority of instances the fault does not lie with the complement, but with the ferments. Keen observation taught physicians of former days to dispense with mercury under such conditions and to apply other therapeutic measures. And if we scrutinize these "other therapeutic measures" in the light of our present knowledge we find that all and every one of them stimulate the formation of antibodies or increase their activity. The scathing criticism with which Oettinger[9] flails the continued useless repetition of antisyphilitic courses in cases in which results are wanting is fully justified and is good reading for all those who treat syphilis. If ferments are lacking, mountains of complement in the form of specific remedies will do no good.

Comment. The recognition that a lack of complement makes syphilis the formidable disease it is today must, of necessity, turn our efforts to combat this scourge into new and different channels. Not stronger spirocheticidal remedies, but a less harmful complement is what is needed. This complement exists. It is present originally as a normal constituent of the body and is, therefore, perfectly harmless to the system, in great contrast to arsphenamine and mercury. If it were available in sufficient quantity, syphilis would be a self-limiting disease, such as measles, smallpox and scarlet fever. If we can find it, the treatment of syphilis in all its stages becomes an easy task and the prospects to eradicate this scourge loom brightly. The difficulties to find this complement are not insurmountable. There is every reason to believe that we can successfully cope with them.

CONCLUSIONS

1. The primary stage of syphilis is characterized by a sufficiency of ferments and complement and a negative Wassermann reaction. It represents the conditions as given in the first immunity equation.

2. The secondary stage of syphilis and the positive Wassermann reaction are ushered in by the exhaustion of the ready supply of complement. It is characterized by a relative insufficiency of ferments, or complement, or both and represents the conditions as given in the second immunity equation.

3. The tertiary stage of syphilis is characterized by a total insufficiency of complement. It represents the conditions as given in the third immunity equation.

4. Arsphenamine and mercury act biologically as complement.

5. The lack of complement makes syphilis the formidable disease it is today.

6. Not stronger spirocheticides, but a less harmful complement is what we need to combat syphilis.

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BENIGN NEOPLASMS OF THE LARYNX*

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The subject of neoplasms of the larynx may be divided into two classes: benign and malignant. I will confine my discussion to the class of laryngeal growths that are considered benign. When I say benign, I mean in a clinical as well as a pathological sense. The principal clinical differentiation is that of non-recurrence; yet laryngeal papilloma exist in which the growths, though truly benign, do recur.

Before dealing with each type of neoplasm, I would like here to take up the methods of examination that apply to all laryngeal disturbances. The examination of all laryngeal conditions can be carried out in two ways, indirect and direct. I am amazed at the number of cases that have fallen into my hands the past year, where careful and painstaking examinations were never made. Only a few weeks ago Dr. D. C. Orcutt of Chicago referred me a case an example of such neglect. The man had been hoarse for two years and had been under the care of a very prominent man for most of that time, but not making any headway, the doctor sent the patient to a laryngologist, who treated him for over a month by local applications, expecting to shrink up a growth, which he said would pop up between the vocal cords when the patient made an effort to speak. I could see no such growth in this man's larynx, but a swelling and fixation of the arytenoid which clinically suggested malignancy and later proved to be. It was because of superficial examinations that I was prompted to write this paper.

Horseness continuing over three weeks should have a careful laryngeal examination. All cases over forty years of age which have hoarseness that does not yield to treatment should be held suspicious of malignancy until otherwise proven.

*Read before Section on Eye, Ear, Nose and Throat, Illinois State Medical Society, Chicago, May 18, 1922.

Any condition which predisposes to laryngeal irritation should be cared for as it breeds malignancy.

The indirect method seems to have fallen by the wayside, especially in the minds of the younger men. They seem to harbor the idea that all laryngeal examinations must be by direct laryngoscopy. This is a grave error and should be corrected. The indirect method is simpler and easier for both the doctor and the patient. This methods, as all others, requires skill and must be practiced patiently. I have spent many hours practicing this method through the wide neck of a bottle which is hidden and removing various foreign bodies with a MacKenzie laryngeal forceps. Dr. Killian, the originator of the suspension apparatus, stated that the indirect method was not to be entirely supplanted by the direct method. When the epiglottis hangs over the larynx the epiglottis is easily moved forward and out of the way by using my new epiglottis anchor, which can be applied readily after the application of a little local anesthetic. This instrument can also be used in the surgical removal of various formations in this field, especially when located at the anterior commissure.

The direct methods, suspension and spatula, have their use especially in examination of children. To my idea the spatula is preferable in children because anesthesia is not necessary.

A good light is needed in all examinations. General relaxation must be had in all suspension cases for careful inspection of the parts; this can sometimes be obtained by cocain and scopolamin morphin. I prefer ether for suspension. Dr. Chevalier Jackson states that there is no case in which direct-laryngoscopy cannot be done to expose the larynx except in an ankylosed jaw. Suspension laryngoscopy is not applicable in all cases.

I will now discuss the various types of neoplasm.

Papilloma is an epithelial projection on the surface of the laryngeal mucosa growing from a base of epithelial proliferation. It is the most common of all the laryngeal growths.

The cause of papillomata is unknown, but they must be due to some form of irritation. They are most often found in the male and at all ages. Dr. Chevalier Jackson reports congenital cases. These tumors are usually located on the vocal

cords, ventricular bands and parts below the cords, but may be found almost any place; they may be single or multiple and vary in size from a millet seed to a pigeon egg. They are usually cauliflower in appearance, whitish, pink or red, depending on amount of irritation. They do not ulcerate or invade the structures they spring from. They sometimes disappear spontaneously and may return after removal.

The symptoms will be variable, depending upon the size and location of the growths. Hoarseness, respiratory impairment, cyanosis, aphonia and croupy coughs may be present. Sir St. Clair Thompson reports cases discovered by accident, no subjective symptoms being present.

Diagnosis should not be difficult after a thorough inspection of the larynx has been made. Microscopical sections should be made, especially in adults.

Treatment of papilloma will vary somewhat in the individual cases, but surgical removal is the rule. Medicinal agents locally and internally have been tried, with no benefit. Locally, alcohol applied in full strength as advocated by Delavan; thuya and silver nitrate 3 per cent. have also been used. Internally arsenic, potassium iodide and other drugs have been used with no apparent results.

Tracheotomy may be necessary, depending upon the symptoms present. If cyanosis and dyspnea be present, tracheotomy is necessary and justifiable and one should not wait too long for this step. When the papilloma is large and more or less obstructing the passageway one should proceed cautiously with the direct method and unless the operator is especially skilled it will be safer for the patient, to precede with a tracheotomy. Where tracheotomy has been done the operator has a greater feeling of assurance in removing masses by the laryngeal tube; for even though the tumor has been successfully removed an unexpected edema may occur. J. P. Clark, in his article, in Boston *Medical and Surgical Journal*, 1905, was very emphatic in his statement regarding the treatment of these cases by tracheotomy and non-interference with the growth. We should not forget, however, that long-continued use of the tracheotomy tube may cause stenosis or collapse of the tracheal rings which is serious.

Thyrotomy has been done in days gone by and I think they should be but memories; while many writers report cures, yet the frequency of recurrences and dangers to the voice, as well as probable stenosis should be enough to condemn it, especially with our improved technic today in reaching the laryngeal area. J. S. Davis prefers thyrotomy where growths extend well below vocal cords and interfere with respiration. Fulguration has been tried by Harmon Smith and he reports very favorably its application; yet I believe one must be very careful in its use, otherwise serious complications may arise.

Radium has had its trial with pros and cons, and, like all new methods, must have its disappointments as well as its successes, for time alone can prove its usefulness.

Radium cannot be used as a therapeutic agent successfully without a thorough knowledge of its physics. I believe this lack of knowledge is responsible for the many mishaps in its application and do not believe it should be applied except by the assistance of one so skilled. The lack of knowledge in screening the various rays are responsible for burns that are reported in literature. Dr. C. G. Coakley reports case of latent burn from radium used six months previous.

The use of x-ray treatment in this condition has been disappointing, but the new high voltage x-ray may prove beneficial.

Of the cases I had, it was not necessary to do tracheotomy. Two of the cases which I cared for were in children and one an adult negro. One child had a single mass at the anterior commissure, the other a large single mass attached to the right cord subglottically and two small buds on the opposite cord. These were removed by suspending the children under ether anesthesia, the tumor masses grasped by a forceps and severed with the Lynch knife; the raw surface touched with grain alcohol and Comp. Tr. Benzoine. The two small buds I picked off with Jackson papilloma forceps. It has been over two years since these were cared for with no recurrence. The adult case, the negro, was done by suspension, under scopolamin morphin injection and 10 per cent. cocoaine locally, the tumor mass being attached in the interarytenoid area, which made it easier of access. This was also removed by sharp dissection. Histologically, this proved to be a papillofibroma. While visiting Dr. Jackson's clinic last fall, I saw him remove papilloma in children by engaging the mass within the end

of the tube, sever the growth from the underlying tissue, suction being produced in a canal along the tube which would prevent the mass from dropping from the tube. This is probably all right in a master's hands.

Chevalier Jackson sums up his conclusions regarding papilloma of the larynx as follows: 1, Multiple recurent papillomata constitute a benign self-limited disease; 2, those occasioned cases that recover after a single operation are examples of a short limit, or the operation has been done near the end of the time limit. The operator is apt to be misled into attributing a remarkable recovery to the particular method he happened to have used; 3, papillomata repullulate on the surface; they do not infiltrate; 4, after removal of papillomata, no matter how radically, repullulations occur at the site of removal and new papillomata appear at new locations in the larynx, or even the pharynx, fauces, lips and anterior for nares; 5, even if you eviscerate the larynx your patient will get well no quicker than if you removed the growths superficially and evisceration will have irremiably ruined the voice; 6, the methods employed in cancer are utterly out of place in cases of papillomata in children. Cancer is an infiltrating disease with no limits except the life of the patient. Multiple recurrent papillomata of children constitute a benign self-limited disease, usually ending in recovery if asphyxia is prevented. Scars, tissue destruction, vocal ruin and radium burns are of no consequence in cancer; they are diaster in papilloma; 7, the best method of cure of multiple laryngeal papillomata is obtained by scalping off the projecting parts of the growths without any attempt at removal of the base, repeating the procedure as often as repullulating buds apear. The removal requires but a minute or two with the direct laryngoscope and proper forceps.

Fibroma ranks second in frequency of benign growths. Its cause is unknown. Occurs at the age of from twenty to fifty years. Found most often on the upper surface of the middle or anterior portion of the vocal cords. Usually they are single and sessile, but may be pedunculated. They are greyish, pink or dark red, smooth and round. Many vary in size from that of the head of a pin to a walnut. Symptoms vary as to size and location. Histologically they consist of fibrous connective tissue covered with epithelium; the centers may sometimes undergo softening, producing a cystic condition.

The treatment is operative by indirect or direct technic. The two cases which I had were done under suspension. A woman 37 years old, cabaret singer, had been hoarse for eight months when I saw her and could not continue her work. I found a small tumor the size of a pea at the anterior part of the left vocal cord with rather a small attachment. Under ether anesthesia I removed by sharp dissection. The Columbus laboratory reported the microscopic findings that of fibroma. This patient has since been singing for three years without and difficulty. The other case was a man 43 years old, a South Water street merchant, who became hoarse and finally could not call aloud as was necessary. Examination revealed a small tumor pedunculated the size of a shot attached at the middle third of the left vocal cord. This patient was given scopolamin-morphin hypodermically half hour before operation and cocaine 10 per cent. was applied just before suspending. The tumor was grasped with a tenaculum and removed by sharp dissection. The Columbus laboratory reported fibroma. This patient is now back at work for over a year and has had no further trouble.

Cystomas are due to retention from obstruction in the duct of a muciparous gland or a distension of a lymphatic vessel and are rare. Usually they are single and spring most often from the epiglottis, but may be found on the ary-piglottic fold, ventricular bands and rarely attached to vocal cords. They may be broad based or pedunculated, smooth surface, dilated vessels coursing over them and their color greyish, pink or red, depending on size and location. Symptoms will depend upon the position and the tumor may be present without producing symptoms.

Treatment is the removal of the cystic wall and cauterization. Dr. W. Stuart Low advocates galvano-cautery puncture and claims that moving the point about in the gland causes disappearance without recurrence. A case sent me by Dr. Jno. R. Hoffman, a man 54 years old, was hoarse, had difficulty in swallowing and breathing, weight 250 pounds. Indirect examination revealed a pedunculated mass the size of a walnut almost obstructing the opening of the larynx, attached to the junction of the epiglottis and ary-

epiglottic fold. Diagnosis of cyst was made and removal decided. He was suspended. Cocaine 10 per cent. and scopolamin and morphin administered and the mass snared off; after that the larynx could be seen and appeared normal. The findings of the Columbus Laboratories were masses of epitheloid cells infiltrating subcutaneous tissue, epitheloid carcinoma.

Lipoma of the larynx is exceeding rare, but few cases are reported, the etiology is vague, but Goldstein thinks it may be due to one of three causes: 1, Simple hyperplasia of encapsulated fat cells which Chirari has observed microscopically about the plane of the ventricle; 2, an invagination of the mesodermis tissue which develops into lipoma, and 3, a disturbance in the chemistry of the cells in which fat is deposited. They are found in the ventricle of Morgagni ary-epiglottic fold, sinus pyriformis; the size varies; it may be pedunculated or not, smooth surface, color yellowish or pale pink, depending somewhat on the location. Symptoms will depend upon location. Diagnosis can only be made sure by microscopical examinations. Treatment is the removal by snare or sharp dissection, by the direct method or thyrotomy.

Granulomata are not true neoplasms but must be dealt with as such in some cases, for they produce certain laryngeal symptoms, as in a case referred to me by Dr. H. B. Fuller. Man 25 years of age, hoarseness for few months. Indirect examination revealed subglottic tumor size of a navy bean below right vocal cord at junction of anterior one-third and posterior two-third. It was pale and smooth. Patient was suspended under local anesthesia and tumor grasped with tenaculum and severed by sharp dissection. He has had no more trouble. Dr. Fuller saw him later and the patient was fine. Special examination by Dr. Hektone: No T. B., no malignancy, no syphilis, low grade infection of submucosa as evidenced by few plasms and epitheloid cells. John N. McKenzie considered these tumors tubercular.

Angiomas are very rare. Histologically they are divided into hemangioma and lymphangioma, usually sessile and single, are irregular in size, may appear on the vocal cords, ventricular bands, ary-epiglottic folds and sinus pyriformis, are thought to be congenital, dark bluish or reddish in color, may be found at any age. Felix Simon reported a case wherein the clinical features were angioma. Upon removal found its appearance was due to extravasation of blood and the growth was on the epithelioma. The symptoms will vary as to size and type of growths. Some cases have repeated attacks of bleeding. With recurrent hemorrhages one should make careful laryngeal examinations. Some cases never produce symptoms and are found at necropsy. Treatment of this class of tumors should be cautious and will depend upon the symptoms. Radium has been used with very gratifying results and is best applied by suspension laryngoscopy. If dyspnea is present, tracheotomy may be present. Fulguration and electric cautery may be used, but care should be taken because of secondary bleeding.

Myxomas are very rare, usually the size of a pin head or pea, usually pedunculated and attached along the edge or surface of the cord. Dr. Jonathan Wright showed a microscopic section in which there was no field that the predominating characteristic was not that of a myxoma. Treatment is surgical removal by direct or indirect method, the former being preferable unless contraindicated.

Adenomata make their appearance on ventricular bands and wall of ventricle, are rare and are due to dilated glands. The ages of cases reported vary from 22 to 74 years. They are usually found in the male sex, are irregular in outline and are never found in infancy. According to Wright and Smith, they should be viewed with suspicion as they often go on to malignancy. Diagnosis must be made by the microscope.

Chondromas, the cause is unknown, found mostly in males in fifth or sixth decade. Usual site is the cricoid, but may develop from any of the cartilages, seldom multiple. They are slow growing and size varies. Symptoms vary as to location and size; may interfere with respiration, phonation or swallowing. May produce no symptoms. Is firm and has a smooth surface. Diagnosis positive only by microscopical sections. X-ray may show shadow, thereby being helpful. Treatment is surgical. Thyrotomy may be necessary, depending upon the location of the tumor, otherwise removal may be done by suspension.

The case of chondroma which I saw in my

clinic was a man 46 years old; came complaining of a cough which he had for nearly two years. When bending his head forward he had difficulty in breathing; throwing his head back relieved him, no pain, no trouble in swallowing. External examination disclosed nothing. With indirect laryngoscope, a tumor mass could be seen extending from the right side subglottically, about the size of a walnut, rather pale in appearance, the action of the cords apparently normal. Later I suspended him under local anesthesia, with cocaine 10 per cent and scopolamin-morphin. I was able to make a very careful examination and demonstrated the growth to about twenty-five students. It was firm, attached to the cricoid, resisted needle puncture. Diagnosis of chondroma was made and appointment made to remove it, but patient failed to return. I believe this could have been done under suspension and had planned accordingly.

Singers' nodules are small elevations which appear along the edge of the vocal cord about where the anterior third joins the posterior two-thirds. They vary in size from a pin head to a small pea and may be bilateral. Microscopical section show them to be made up mostly of thickened epithelium. Their etiology is thought to be improper use of the voice. Symptoms are hoarseness, hacking cough and in singers inability to produce certain tones. Some hyperemia of the cord. Treatment: Some claim the proper placement of the voice is effective treatment. Many advocate the use of the galvano-cautery, but great care must be exercised. A case which I had was a fruit vender, an Italian who was unable to cry his wares. Examination, indirect laryngoscope revealed a nodule on left vocal cord at about the vocal process of the arytenoid, the size of a kernel of wheat, which was removed under suspension laryngoscopy. He is once again able to shout to the house tops.

In conclusion, I would like to impress upon the profession the necessity of careful laryngeal examinations, and to say that much remains to be done in this field of research.

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DISCUSSION

Dr. Harry L. Pollock, Chicago: These cases that Dr. Cavanaugh presented of non-malignant growths are very interesting and bring to mind several cases he has had recently. I wish to speak principally on the anesthesia, in these cases which is of interest to all laryngologists, as they occur principally in adults. I have always been opposed to general anesthesia and formerly used mostly the cocaine mud, but recently we have been using the synergistic anesthesia of Gwathmey which has been very successful. This is morphin sulphate, ⅛ gr. dissolved in 2 cc. of a 25% sol. of magnesium sulphate, three injections given half an hour apart, followed a little later by three ounces of ether and 2 drams of paraldehyde per rectum. After two hours these patients are perfectly asleep; you can make them understand by talking to them but they are asleep and this has given us excellent results as an anesthetic. The Doctor did not speak of recurrences, but these multiple papilloma of children usually recur. Lynch says that if you use a sharp, long knife and cut these cleanly that you are not likely to get recurrences, as you are when a blunt instrument is used and there is less trauma. I have been in the habit of cauterizing the base after removal and in some instances we have used radium. You can place the radium while still in suspension, and even in children after a general anesthetic you can get the radium in place and I think we find less recurrences than in any other form. Dr. Lynch uses fulguration, but notwithstanding this they recur. I think the radium is best. One can use unscreened radium for twenty minutes to half an hour and get better results than by just leaving the growths alone.

Another point concerns tracheotomy as apart of the treatment. Most patients who come, have already had a tracheotomy done, but if they have not you can suspend them and remove the growths and it is surprising how little reaction occurs. Last week I had a case of multiple papilloma with scarcely any breathing space. I gave the patient synergistic anesthesia, suspended him, and removed the entire growth with practically no reaction. As Dr. Cavanaugh has stated, there is only one objection to suspension laryngosopy and that is where the growth is right at the anterior commissure, but in this I disagree. Often you will find a little piece of growth remaining and in several cases it has been necessary to use the indirect method to get the little piece just at the anterior commissure.

Dr. Edwin McGinnis, Chicago: I wish to make two points in reference to benign tumors of the

larynx. First, operating with the indirect method with cocain anesthesia it is very often difficult to get complete anesthesia of the mucous membrane of the larynx, and as you put the biting forceps down directed by the mirror, you will find the patient has some sensation and squeezes the tissue down over the biting forceps. We have had two or three recurrences at the site where the larynx was squeezed against the instrument, so I agree with Dr. Cavanaugh that it is best to use a general anesthetic and get a complete view of the larynx.

Second, we should cauterize the base of the tumors. Various methods are used. Dr. Pollock has used the actual cautery, fulguration, and radium, and in the last six or eight cases I have seen I have used a strong silver nitrate solution. With the patient under an anesthetic you can use a silver nitrate bead on the end of a probe and get a much more kindly healing than if nothing of this sort is used at all. We use the silver nitrate to the base of the tumor after removing the growth as a routine measure.

Dr. A. H. Andrews, Chicago: I have found in these cases that the patients are very much more quiet and you can work on them much better if they have 1/150 grain of scopolamin and from 1/6 to 1/4 morphin. It is surprising how much difference it makes in the ease with which one can operate.

Dr. John A. Cavanaugh, (closing): The subject is a large one and in the time allotted difficult to bring out all the important points. The use of radium, as mentioned by Dr. Pollock, has its place particularly in certain type of tumor, the papilloma or angioma, but should be used very cautiously and carefully. Tracheotomy, as mentioned by Dr. Pollock, was discussed in the paper.

As far as suspension is concerned, I realize that it is not possible to suspend all these cases. There will be times when the other procedures will have to be carried out.

The cautery, as mentioned by Dr. McGinnis, should be carefully applied because of the danger of producing scar tissue around the vocal cords.

THE X-RAY TREATMENT OF THYROTOXICOSIS*

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Thyrotoxicosis or toxic goiter is a very frequent ailment in this region, and, as in most all cases, clinical manifestations are so serious that patients suffering with it come to physicians for relief, all of us see these cases frequently and have some of them constantly under our observation and treatment.

Roentgenotherapy has been used in the treatment of diseases of the thyroid gland for the past 24 or 25 years, with increasing success as the methods and apparatus have improved, consequently the literature upon this subject is abundant.

I shall discuss briefly the etiology, symptomatology and diagnosis of thyrotoxicosis or toxic thyroid, but will endeavor to point out in a concise and brief manner a few good diagnostic points, and then take up reasons why I think the disease is best controlled by the application of the x-rays and why and how this method of therapy is applied.

The thyroid gland has been called the balance wheel of metabolism. When it is functioning properly, and at the correct rate for the individual, it so influences the oxidation of food taken and absorbed into fuel, that all the fuel so produced is properly utilized to best advantage.

If deranged, so as to be functioning too actively or too slow, we have the consequent too rapid or too slow oxidation of the fuel, with the resulting upset of balance of the economy of the body. Thus the person whose thyroid is working too actively, loses weight, while the one whose thyroid is subnormally active generally puts on weight.

In addition to these effects, there are, of course, the other well known symptoms—which are the result of the poisoning of the heart and nerves by the excess of the secretion of the gland and the absorption of the thyrotoxin, the derangement of the sex apparatus, the digestive tract, etc., but the principal effect is as just indicated.

What is of most importance to our study of this subject is that over active thyroid glands produce hyper-thyroidism or thyrotoxicosis with its well-known syndrome of signs and symptoms and with which we are most particularly interested at this time.

Classification. According to Plummer's classification there are two separate and distinct types of hyperthyroidism, each of which is due to a different pathological change in the thyroid gland.

The diffuse hyperplastic type, which Plummer says is always associated with the classical exophthalmic goiter and its symptoms, and the adenomatous type which, while it is productive of hyperthyroidism (or better hyperthyroxism, if I may be permitted to coin a new term) only, and which may be differentiated from the previously named (diffuse hyperplastic) type by the clinical findings.

In both these types the basal metabolic rate is

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increased, and, as will be later mentioned, both these types are affected beneficially by irradiation.

Tests. By the application of certain measurements, a variety of standards or constants are being applied to medical science. We have a normal temperature, a normal pulse rate, normal renal excretory rate, normal alkalinity, acidity and specific gravity of the various body fluids, normal number of ratio of blood cells, etc.

Recently there has been evolved a standard for the measurement of the basal metabolism rate. That is the test which represents the energy exchange per hour and unit of surface area in an individual at as nearly as possible complete physiological rest (and without food) for a definite period.

Like all other standards, there is a considerable range which must be classified within the normal, but it has been determined that *the basal metabolism rate is more constant than either the temperature, pulse, or respiration,* and consequently is a better and more accurate index of changed or deranged function.

Of course the findings by this means must be correlated with clinical data to make them of marked value, but with this correlation and clinical as well as laboratory study, the more obscure and difficult cases of hyperthyroidism may be clearly discerned and diagnosed.

Frazier and Adler (of the Univ. of Pa. Hospital, Phila.) in a discussion of basal metabolism in the Am. Journal of Med. Sci., July, 1921, say: "Our knowledge of the physiology and of the diseases of the thyroid gland is based primarily upon such studies." . . . "Studies in basal metabolism have been of the greatest scientific value and interest in experimental physiology and research medicine."

According to DuBois—the pioneer of metabolimetry in this country—toxic goiter stands out par excellence as a disease of increased basal metabolism, and increased basal metabolism stands out as the chief symptom of hyperthyroidism. The basal metabolism rate is the best index that we have of the severity of this disease.

The heat generating property of the thyroxin (the excessive secretion of which produces the thyrotoxicosis) has been definitely proven and the reduction of the thyroxin secretion by the x-rays has likewise been proven, so that the careful application of these proven facts goes a long ways toward solving a problem over which our profession has spent much time, labor and study.

While the manipulation of the apparatus necessary to this test is comparatively simple, the test should be made by experienced persons and under the most favorable conditions possible to obtain.

Epinephin Test. Among the simpler and more easily applied tests for hyperthyroidism may be mentioned the epinephin test of Goetsch, in which 0.5 c.c. of a 1:1000 solution of epinephin is administered.

A rise of systolic blood pressure of 10 or more (mm. of Hg) or a rise in pulse rate of 10 beats per minute, together with production (or increase) of tremor, sweating, vascular pulsation, palpitation of heart or nervousness, *is an indication* of hyperthyroidism.

The cause and nature of this reaction is not definitely known, but it is known that it is associated with an increase in the heat production, which runs parallel with the intensity and severity of the reaction. It is probably the result of a stimulation of the sympathetic nervous system.

It must be said that a certain few psychoneurotics, who show no tendency toward hyperthyroidism, give a positive reaction to this test, so that it should not be too highly credited, except in the borderline cases where slightness of the symptoms are increased so as to bring out the more characteristic ones.

Alimentary Test. M. Ford Morris made an effort to determine what value may be attached to the alimentary hyperglycemia test in the diagnosis of mild hyperthyroidism—particularly in the so-called borderline cases in which the clinical signs and symptoms are insufficient to justify a positive diagnosis and laboratory methods would be necessary to enable a decision to be made.

Ten cases were studied in which a diagnosis could not be positively made without the basal metabolism estimation, which were strictly borderline cases clinically, and were proven by basal metabolism tests to be mildly thyrotoxic.

Three normal individuals were used as controls and were subjected to identical tests.

The result of this series of tests seem to prove conclusively that the alimentary hyperglycemia test is of distinct value in the diagnosis of mild hyperthyroidism.

Serum Fixation Test of Berkley. Wm. N. Berkeley, of New York, in two communications

through the Medical Record in 1921 and 1922 (1/28/22) states that: "the serum of patients with toxic thyroidism will, under certain circumstances, bind compliment and that the test may prove of diagnostic value."

He further states: "The blood of some patients who show symptoms of Basedow's disease binds compliment in the presence of an antigen made from the normal thyroid glands of dogs or guinea pigs. The reaction may be due to a specific thyroid substance which combines with an antibody in the blood of the patient."

Those of you who are interested may find a complete discussion of this subject in the Medical Record of Jan. 28, 1922. It is very interesting.

Latent hyperthyroidism and hypothyroidism are relatively more common than is generally supposed, but with the application of special diagnostic tests—particularly the basal metabolism estimation—they may be readily diagnosed.

What concerns us more than any one thing in this paper is, What is the best means of slowing down the action of these over-active, over-working thyroid glands? How can we best reduce the output of thyroxin to normal for that particular individual?

Shall we administer drugs? Yes, by all means. Try all you ever heard of and some you never heard of. What will your results be? Will many of the patients get well? No! decidedly, no! Some may show improvement, but considerably less than 20 per cent. may be considered curable by drug treatment alone, and many of these have relapses.

Shall we recommend surgery? These patients are not good surgical risks; their hearts are not good; their pulse rate run from 120 to 180 per minute and is irregular, consequently we fear to recommend surgery.

Besides, the patient does not want to be operated upon unless there is a considerable margin of safety. Records of the best clinics show that a considerable number of the cases operated on are not cured by the operation per se, and that there is a mortality of from 1 to 6 per cent.

Crile of Cleveland—that master of thyroid surgery—in the Journal of the A. M. A., Oct. 22, 1921, reported a mortality of 1 per cent.. and on Jan. 22, 1922, before the Chicago Medical Society, he reported 1,869 operations on the thyroid gland, including 1,069 for exophthalmic goiter with 25 deaths (a mortality of 2.4 per cent.) and 783 ligations with 6 deaths (a mortality of .73 per cent.).

At the Am. Congress on Internal Medicine at Rochester, Minn., last month, Pemberton reported that the operative mortality of Basedow's disease at the Mayo Clinic is between 2 and 3 per cent., and that of toxic ademona was 1.5 per cent.

With these percentages—low as they are—and the knowledge of the bad surgical risks of our patients, we must consider the operative risk, especially when we know that fully 90 per cent. of all cases properly treated by x-ray therapy are cured, and this without any operative risk whatever.

It has been stated that radiation treatment has caused the formation of adhesions between the thyroid gland and its capsule, but this is manifestly wrong and erroneous. There is nothing in the action of irradiation that can possibly have this effect, and any such adhesions which might have been found in the cases mentioned were certainly due to thyroiditis or some other cause. I am dismissing this with these few words because, as I have just stated, there is nothing in the action of the x-rays that could possibly have this effect.

So I contend, and have for the past ten years contended, that x-ray therapy is the treatment of choice for hyperthyroidism. Briefy my reasons for this are as follows:

1. Because no harm can result and past results show that the method has cured many and relieved all others treated.
2. There is no operative risk.
3. There is no confinement to bed. (Crile, in the above-mentioned paper, reports an average period of confinement in bed of 25¼ days in a recent series of 500 cases.)
4. There is no fear of operation, neither by the patient, her family, friends or her physician.
5. There is greater likelihood of cure and less likelihood of recurrence, with the additional assurance that we still have the same means and methods of treatment if recurrence takes place.
6. There is likelihood of earlier relief of the most urgent and pressing symptoms and of ultimate cure in a shorter time, consequently a shorter period of disability.

7. There is no scar on the neck.

I made these claims, with a full knowledge of how seemingly revolutionary they were, several years ago, and up to this time have not had to retract any of them.

The general medical profession are waking up to the efficiency of x-ray therapy in toxic goiter. Ford Morris, Jr. (in the Med. Record of Sept. 11, 1920) said in part: "The x-ray is a most excellent agency for depressing the excessive secretion of the thyroid. Knox reminds us of several precautions to be taken in giving x-ray treatments, such as careful estimation of dosage on each occasion, adequate filtration, the use of a penetrating ray and the use of secondary filters of leather, etc. The thymus should also be x-rayed each time."

When medical men of the standing of James H. Means of Boston, strongly recommend the use of x-ray in the treatment of toxic goiter we can rest assured that it is about the "last word."

How does x-ray therapy accomplish these seemingly marvelous results? How can the activity of the thyroid gland be so markedly affected?

To the initiated this is very simple. The x-rays have selective action upon glandular tissue and because of this selective action the thyroid gland is particularly susceptible to its effect.

By lessening the activity of the glandular epithelium primarily and by causing a proliferation of the cells of the intima of the blood vessels and a consequent obliterative endarteritis in the gland, a more or less prompt reduction in the output of thyrotoxin is effected. By the primary inhibitory effect upon the gland cells the activity of the gland is immediately influenced and by the obliterative endarteritis a reduction in the amount of blood passing into and through the gland is effected and atrophy begins. This effect is exactly like ligating some of the arteries without the undesirable complications. It is gradual, without systemic shock of any kind and is as sure as ligation, without the surgical risks. Less blood is supplied to the gland and it slows down its function, reduces the amount of thyrotoxin it produces and sends out into the circulation, and we have an early reduction of the thyrotoxicosis. Besides the action upon the blood vessels, there is, as before stated, a marked sedative action upon the activity functioning gland cells, which is in a large measure the cause of the early effect of the treatment.

This reduction of the thyroid activity is continued until we have arrived at what seems to be the normal activity for that individual when the treatment is discontinued and the patient kept under observation by us and her family physician. The basal metabolism test is used to check up the activity of the gland when desired.

DaCosta, who was one of America's leading master surgeons, reported that he had his Basedow's disease patients subjected to x-ray therapy before he operated on them, in order to lessen the vascularity and reduce the toxicity of the gland. The Mayos of Rochester do the same in toxic cases. If these eminent surgeons would permit the eradication to continue, they would not need to operate on 10 per cent of these cases.

James T. Case, a well-known surgeon and radiologist and son-in-law of the surgeon-in-chief of the great Battle Creek Sanitarium, recently stated that no more operations for toxic goiter were done in their institution, all of them being treated by x-ray therapy.

From our past experience we have found that it requires from four to eight full dosage treatments to affect a cure. If the patient is extremely toxic, full dosage treatment cannot be administered at the beginning, but if not very toxic the treatments are administered in full dosage about every 21 days, and the patient is kept under the observation of the family physician in the interval between treatments.

In 1913, Halsted, in the Harvey lecture, stated that the thymus gland, acting either alone or in conjunction with the thyroid is responsible for many of the symptoms usually ascribed to the thyroid gland.

In a recent "Discussion of the possible role of the thymus in Graves' disease and myxedema" by G. A. Friedman of New York, the essayist says: . . . "the fact remains that the enlargement (of the thymus gland) is associated with . . . Graves' disease." Author says: . . . "It is the consensus of opinion at the present time that thymic tissue persists throughout life and never involutes completely in the full sense of the word. By this is meant that just as in the individual affected with Graves' disease, the thymic remnant leads to hyperplasia

and the thymic remnant of a myxedematous individual becomes still further atrophied."

He further says that "it is highly probable that exopthalmos, which is one of the cardinal symptoms, is partly due to thymic hyperplasia.

The statistical data of Albert Kocher showed that exophthalmos was present in 70 to 80 per cent. of the typical cases of hyperthyroidism. This percentage corresponds closely to the incidence of thymic hyperplasia in this disease.

Rossle reports a series of 52 cases of hyperthyroidism with thymic hyperplasia. McCardi found 18 cases with thymic hyperplasia in 35 cases of sudden death in hyperthyroidism. Matti found in the literature 183 cases of hyperthyroidism on which a post mortem had been made. In 98 cases, or 73 per cent., hyperplastic thymus glands were found. The closeness of these figures to the percentage of the exophthalmos leads us to believe the possible role of the thymus in causing exophthalmos, and this is rather strongly confirmed by the experiments of Bucher and Crotti, who independently experimentally produced exophthalmos, tremor and tachycardia in dogs by injecting thymus gland extracts into the peritoneal cavities of dogs." (Medical Record, 11-5-2 p. 806).

Because of Halsted's statement in 1913—which was later amply substantiated—for the past eight years we have been administering x-ray treatments to the thymus area in all cases of Basedow's disease. In a small series of cases the thyroid area only was treated and failure to secure the full effect resulted until the thymic region received treatment—after which cures resulted in all the cases experimented upon.

It must not be understood that the damage to the heart can be repaired by x-ray treatment in these patients, but the process will stop where it is and medicine, hygiene, rest and other necessary measures may and should be used to repair the damage as much as is possible.

The nervous and gastro-intestinal disturbances disappear early in the treatment, the increase in size in the thyroid gland—if present—is usually decidedly reduced in a few treatments, and the exophthalmos, although usually the last to recede, is usually gone in a few months.

The exact technique is not essentially a part of this discussion because it involves special knowledge of radiology not a part of the regular medical curriculum. It would be superfluous and idle for me to discuss spark gap, kilovoltage, filtration, focal distance, etc., before a meeting of general practitioners. The technique will vary with the findings in each case and must vary with the experience and training of the radiologist administering the treatment.

In the treatment of this, as well as any other pathological condition, it must ever be borne in mind that any method of treatment or any therapeutic agent which is potent enough to affect so great a change in the tissues, must, if not properly handled, be as potential for harm as when properly handled it is for benefit. This is certainly true in regard to x-ray therapy. Therefore reputable physicians should not countenance the administration of x-ray treatments by nurses, technicians, or other lay persons. This therapeusis is as essentially important as is surgery; it is essentially important that the surgeon have the proper training and experience. That is conceded. Let me warn you that it is as essentially important that the x-ray therapist be one who has had the experience and training to properly administer treatment, as it is for the surgeon. Physicians must recognize that much more than a knowledge of how to throw the switches on an x-ray apparatus is necessary in the proper treatment of any disease. The possession of apparatus does not any more make a competent radiotherapist than the possession of a lot of glittering knives, retractors, etc., make a surgeon. A thorough knowledge of the rudiments of general medicine, with a good knowledge of pathology, physiology, anatomy, therapeutics, etc., are necessary before any person can properly administer any sort of intelligent therapeusis, be it medical, surgical, or x-ray.

Please remember that hyperthyroidism, thyrotoxicosis, or "hyperthyroxinism" may be present without exophthalmos, noticeable goiter or marked nervous derangement. The patient may have a warm, moist skin with warm extremities and active capillary circulation. Various pressure and nervous reflexes are liable to be increased and a slight tremor present. The individual is liable to be alert, keen and vivacious. Mental and physical weakness after but slight activity is frequently observed, and morning

albuminuria (due to lessened vasomotor tonus) is frequently observed.

Summing up the arguments, I call your attention to the following:

CONCLUSIONS

1. Basal metabolism rate is more constant than either temperature, pulse or respiration and because of this, is a better and more trustworthy index of changed or deranged function.

2. Toxic goiter stands out par excellence as a disease of increased basal metabolism, and vice versa, increased basal metabolism stands out as the chief symptom of hyperthyroxinism.

3. Surgery is not to be recommended in the great majority of cases because it is more dangerous to life and less likely to produce ultimate relief than is x-ray therapy.

4. Enlarged or persistent thymus is a concomitant and frequent occurrence in Basedow's disease and no drugs are known which will affect this gland. Surgery only can remove it. X-rays will cause atrophy of the thymus gland without any risk, surely, safely and certainly.

5. X-ray therapy because of its safety, ease of administration and freedom from all that the patients, their families and their physicians dread, is, and should be, the treatment of choice for toxic goiter of all types.

DISCUSSION

Dr. John E. Tuite, Rockford: I am encouraged by the optimistic attitude of the essayist about curing all of his cases of hyperthyroidism. I am sure if he succeeds, and I have no doubt that he does, it is due to his admirable technic. He has warned you that the possession of the apparatus does not make for success, but the use of it. He has emphasized the importance and the constancy of the basal metabolic rate. I am sure he would go further and say that its constancy will depend upon the technic, and here again it is just as essential to have the proper technic as to have the best instrument. I think far more important. He said that he would relieve the urgent symptoms in all cases of goiter. This was interesting because most of these old adenomatous cases come to us complaining, not of goiter, but of cardiac trouble. As he stated these patients were not necessarily confined to bed for the long period of time that goes with surgical treatment, I am wondering how soon he relieves his cardiac disturbances by allowing his patients to continue around. It would seem to me that confinement to bed, rest, and elimination would be of great importance if he expected to accomplish much. Most of these hyperfunctionating adenomatous goiters with late cardaic trouble are not good surgical risk, but by confining them to bed with complete rest they become much better risks than those of the Basedow type. I wonder how soon he would begin the x-ray treatment and how much latitude he would allow these patients in being about. I am sure his paper is very interesting and if he can give us these results, he is to be congratulated. James Means has reported satisfactory treatment of most goiters of the Basedow type with x-ray but I have not seen that he advocates it in the treatment of all goiters nor does he claim 100 per cent cure. If x-ray treatment offers better chances than surgery, it should be cautiously encouraged but it is my opinion that a large measure of the essayist success is due to the type of cases which he has been getting and, again I will say, to his excellent technic.

Dr. R. L. French, Chicago: I told Dr. Trostler I would come here and discuss the paper if he was severely landed on. I can say that I agree with everything he has said. I have been treating these cases for six years with x-ray and radium and the effect of radium is practically identical with the x-ray. I think every case of thyrotoxicosis should be given the benefit of a course of radium or x-ray before the operation is advised, particularly the cases that come in with rapid pulse and symptoms that make it a dangerous case. I have not seen a case where radiotherapy has failed to reduce the basal metabolic rate. I am sure that Dr. Trostler did not mean to say that he allows the cases with high metabolic rate and bad heart to go back and forth from his office. These cases always receive standard medical treatment, rest in bed, and whatever else is advised by the doctor with whom we work. There are many cases of thyrotoxicosis which can be permitted to come back and forth to the office. I am sure this radiotherapy will incapacitate patients less than any other form of treatment known at present.

I have treated just about as many post-operative cases of thyrotoxicosis as I have cases not operated on, showing that surgery does not always give the desired results. In many cases surgery relieves the symptoms, but we have a recurrence. I have treated several of these, two or three patients being doctor's wives, and two or three had not only had removal of the thyroid, but ligation and everything else. We do not get 100 per cent cures with radiation, but we can always give another series, whereas you cannot use more surgery. The radiation treatment will be of considerable advantage in treating the thymus, which is probably always affected in thyrotoxicosis.

I agree with everything Dr. Trostler said, having had experience with two or three hundred cases in the last few years.

Dr. I. S. Trostler, Chicago, (closing): In regard to the heart, I said it must not be understood that the damage to the heart can be repaired by x-ray treatment, but the process is stopped where it is and medicine, hygiene, rest and other necessary measures may and should be used to repair the damage as much as possible. I think that is clear. I do not say that we have a panacea for toxic goiter. If the patient is in such bad condition that the heart is seriously impaired, of course she should be in bed. As Dr.

French just said, if you have a recurrence after radiotherapy you still have the same method of treatment. If you have used the knife are you going in and cripple the patient permanently? Certainly not. You are coming to the x-ray, so why not use it in the first place and get the good effects from the treatment *per primam?*

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DISTURBANCES OF THE KNEE-JOINT*

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Sir Robert Jones, in an address[1] before the American College of Surgeons, which met in London in 1914, facetiously referred to the difference in structure between the American and English knee-joint. This reference was due to the scant literature of American surgeons on the subject of internal derangements of the knee. He went on to say, "I have been creditably informed that the anatomy of the (American) knee-joint differs but little from our own, and I am forced to conclude, either their cartilages are more securely placed than ours, or, *which is most unlikely that the condition is not as generally recognized as it should be.*" I am of the opinion that should Sir Robert Jones read a paper before us at the present time the introduction would be somewhat modified. The condition is more generally recognized in this country than it has been in the past. Henderson[2] is a prolific writer upon disturbances of the knee-joint and our journals contain valuable contributions upon this subject.

It must be admitted that disturbances of the knee-joint often give rise to great diagnostic difficulties. This is commonly due to the absence of gross objective symptoms as well as to negative x-ray findings. The knee-joint is subject to a large number of disturbances which are based upon mechanical derangements, peculiar to that joint alone. These are dependent upon its anatomical conformation. It is, therefore, necessary for one to familiarize himself with the anatomical, as well as with the possible pathological conditions before attempting an explanation of a knee-joint disturbance.

The knee-joint is the strongest joint in the body. It must be so for weight-bearing. "Special arrangements are provided for the mechanical retention of the joint in the extended position, in view of the fact that the line of gravity falls in front of the center of the articulation." It is practically a hinge-joint, having no lateral mobility in the extended position, but to some degree when the joint is slightly flexed. This is a very important finding in injury to the internal lateral ligament, as well as to the internal semilunar cartilage. During flexion a slight amount of rotation of the tibia takes place upon the femur, and also a certain amount of lateral motion. The bones entering into the formation of the joint are the condyles of the femur, the tibia and patella; these articulations are bound together by strong ligaments and tendons upon



Fig. 1. Showing intimate relation of internal semilunar cartilage to internal lateral ligament and the lack of this relation of the external semilunar cartilage to the external lateral ligament. Taken from Henderson.

which structures the stability of the joint depends. The bones entering into the formation of the joint have a large articulating surface. These, however, do not approximate over a wide area, since the articular surface of the femur does not come in contact with the tibia over a large surface in any position of the joint. This allows a certain amount of sliding and rotation. The sliding of the bones upon one another is prevented by the crucial ligaments; the anterior prevents the tibia from sliding forward upon the femur, while

*Read before Section on Surgery, Illinois State Medical Society May, 1922, at Chicago.

the posterior prevents backward mobility. The presence of any of these movements is an important finding in rupture of these ligaments. The anterior crucial ligament is tense when the knee is in extension and the posterior is tense when the knee is in flexion. Lateral mobility of the joint is prevented by the lateral ligaments, and aided by the semilunar cartilages. Each semilunar cartilage assists the opposite lateral ligament in preventing lateral mobility of the joint when it is fully extended. Of the two, the internal lateral ligament is of greater importance clinically because that ligament and its associated semilunar cartilage are most frequently disturbed. Jones[4] and Morrison[5] have found the internal cartilage injured eight times to one of the external. In Henderson's series,[2] injury to the internal cartilage was even greater, being twenty times to one of the external. The internal lateral ligament is shorter, broader, somewhat fan-shaped, and is fixed at one point to the internal semilunar cartilage, and blends very closely with the capsule of the joint. (Fig. 1.) It is attached to the outer side of the inner condyle of the femur by its broad edge, and tapers downwards to be attached to the outer tuberosity of the tibia. The external lateral ligament is a narrow fibrous band, attached to the inner side of the outer condyle of the femur above, and passes through the split biceps tendon, to be inserted into the head of the fibula. It is separated from its adjacent external semilunar cartilage by the tendon of the popliteus muscle. The semilunar cartilages are two crescentic disks lying in the lateral position of the knee-joint. They are fibrocartilaginous bodies, the extremities of which are fibrous, while the centers are more cartilaginous. These cartilages fill in the gap produced by the articulating surfaces of the femur and tibia in their lateral position. The internal cartilage is crescentic, thick at its convex border, and tapers to its internal border so that it is wedge-shaped. It is firmly attached to the capsule of the joint as well as to the internal lateral ligament at one point at its periphery. Posteriorly it has a firm point of fixation to the tibial spine, while its anterior cornu has a somewhat indefinite point of attachment, the firmest, perhaps, being the transverse ligament which binds it to its fellow on the opposite side. It, therefore, does not get out of harm's way during the sudden strains placed upon it. The external semilunar cartilage is more rounded. It, like the internal cartilage, is also wedge-shaped but has greater play since it is not attached laterally to the external ligament, and therefore has a greater range of motion. The cartilages are firmly fixed on their posterior extremities. The anterior horns, however, have a loose attachment and are therefore reinforced by the transverse ligament, which tends to bind the anterior extremities of both cartilages to one another. Pauzat[6] as well as Henderson[2] states that some fibers of the quadriceps are inserted low down on the inner side of the capsule of the knee joint. These prolongations might pull in such a manner as to disturb the normal contour of the fibro-cartilage, thus causing the anterior extremity to be caught between the bone ends on attempted extension. This view,



Fig. 2. Disturbances of the knee-joint, due to the patella.
Fig. b. Fracture of patella shows wires inserted subcutaneously.
Fig. a. Shows non-union with considerable separation four months after.
Fig. c. Shows complete union after suturing soft structures by the open method.

however, is contradicted by Tenney,[6] who claims that the tendency of these fibers is to pull the anterior cornu of the internal semilunar cartilage up out of harm's way during attempted extension. I am inclined to believe that these fibers play an important role in the production of this derangement. This is especially true when one refers to the mode of production of these injuries. Injury to the semilunar cartilage results when the knee is partially flexed, the foot abducted and the tibia rotated outward. When the individual unexpectedly assumes the erect po-

sition, there is a sudden pull upon the quadriceps tendon and at the same time an extended position of the knee-joint is attempted. The body sways inward, rotating the femoral condyle and its accompanying semilunar cartilage, while the tibial articulation remains still. The anterior cornu of the cartilage is thus pulled inward and upward and jammed between the articulation of the tibia and the inner condyle of the femur. This accident occurred to two individuals riding in a street car, one was a young woman who was a strap-hanger in a crowded car. The car came to a sudden stop, causing her body to sway sideways and rotating her femur inwards, while her foot was firmly fixed to the floor of the car. She felt a sudden pain on the inner side of her knee;



Fig. 3(a). Shows fairly good size spur on upper outer surface of patella. Patient experienced pain and discomfort in knee, particularly when kneeling. Was unrecognized for many years.

Fig. b. Fracture of patella. Patient experienced severe and sudden pain in outer side of knee after a stroke at golf. The knee did not lock but became distended and presented a limitation at extension and slight lateral mobility. Union of fracture resulted after four weeks of immobilization.

the knee became locked and swollen and proved to be a torn internal lateral ligament and fractured internal cartilage. Another case was that of a painter who was standing upon a ladder. The ladder slipped and he tried to regain his balance. His body swayed while his foot was arrested on the step of the ladder. He experienced a sharp pain on the inner side of the knee and fell to the ground. Numerous lockings with effusions followed. At operation the anterior half of the internal cartilage was found torn. Morrison is of the opinion that displacement of the cartilage is rare without fracture. The term *tear* instead of fracture should be used in describing this lesion, since it is the fibrous portion and not the cartilaginous which is separated. The torn cornu of the cartilage can be completely separated so that it may lie in any position of the cavity of the knee-joint, or it may be attached by means of a pedicle and dislodged from its normal position. In one case of my series, there was a clear history of a tear of the internal cartilage with repeated lockings. The pain, however, was referred to the outer side of the knee. The x-ray showed a calcified semilunar cartilage placed loosely in the knee-joint. I was unable to tell where the cartilage was, and so had to resort to longitudinal splitting of the patella for its removal.

Disturbances of the knee-joint can be classified into two general classes; first, those that arise from intrinsic causes, such as 1, ruptured lateral ligaments; 2, torn and displaced semilunar cartilages; 3, osteochondromatosis; 4, synovial fringes; 5, foreign bodies; 6, exortosis; 7, tumor. The second, those arising from extrinsic causes. These are, 1, fracture of the patella; 2, fracture of the femoral condyles or fracture of the tibia, especially fracture of the tibial spine; 3, epiphysial separation. There are also a group of cases which do not belong to either class, but comprise cases classed under the heading of chronic arthritis or so-called "traumatic synovitis." These are of metastatic origin, disclosing no definite x-ray findings. The symptoms presented are pain and discomfort in the knee-joint and on careful examination a slight amount of fluid, and a limitation on extension may be the only findings. The condition usually occurs in stout people of about 40 years of age, but may be found in young persons. The clinical course extends over many years, and when such a knee-joint is repeatedly examined by means of the x-ray it finally may show a thickening of the articular surface of the joint and in some cases a deposit of osteocartilaginous bodies. The treatment of these conditions in their incipience is a problem, since they respond to no definitely recognized therapeutic measure at our disposal. It may be premature to state that these joints respond very favorably to the treatment of dithermy. One must exclude all foci of infection, and one must also remember that the knee-joint synovial membrane may become a focus of infection feeding itself.

CASE REPORTS

Case 1. Fracture of patella. I show this case to bring out two points; first, the method of approaching the joint in fractures of this type and, second, to emphasize the importance of suturing the soft structures. This patient is a man 35 years of age, a taxicab driver, who fell on the flexed knee, fracturing his patella. He was operated upon by a surgeon, who did a subcutaneous wiring of the patella. The wires were withdrawn upon the tenth day and motion passive, and to some degree, active, was carried out. You will see from the x-ray plate taken several months later the result of the operation. The fractured ends are completely separated and retracted for a distance of about an inch. On attempted motion the knee presents considerable recurvatum and a depression can be felt through the skin of the fractured surfaces. When the wires were withdrawn a sinus resulted which remained open for some time. The second operation performed upon this patient was an open suturing of the patella by means of heavy kangaroo tendon. The incision I employed in a large number of cases and found very satisfactory consists in making an incision about an inch and a half above the patella in the median line, and carried laterally about a quarter of an inch to the outer border of the patella in a semicircular fashion, curving downwards and inwards to about the center of the patella below and continued over the tibial tuberosity downwards, for about an inch. The illustration and description of this incision will appear in detail in a future contribution. The advantages of this incision are first, it gives a greater field of exposure; second, the lateral ligaments can be reached on both sides; third, it breaks continunity of a straight incision over the joint and converts it rather into three incisions, as you will see, two straight and one circular; and lastly, motion can be immediately instituted without placing tension upon the skin sutures. The horseshoe incision commonly used makes the topmost portion of the skin flap removed from the circulation and so we often find areas of necrosis of the skin at its periphery. It is not necessary for me to go into technical details of suturing a torn patella since you are all familiar with the method commonly used. It is essential, however, to remember that in operating upon old ununited fractures of the patella it is necessary to remove all the fibrous tissue between the fractured ends. The sutures must be deeply placed in the soft structure on either side of the patella and the edges of soft tissue must be sutured by means of a mattress stitch, so that the edges are everted. Motion must be started immediately after the operation. This prevents the stiffness and incapacity which follow operations upon the knee.

Case 2. This patient is 16 years old. He is employed as a cashier in a moving picture house, necessitating his sitting upon a high stool, one foot extended to touch the floor, while the other, the left foot, assumes a flexed position. One day when this patient hurriedly got up from his seat he twisted his right knee. The knee became painful and swollen. Twenty-four hours after the injury the pain become so intense that his sleep was disturbed. There was considerable effusion in the knee-joint and, as you will see from the radiograph, the patella as well as the patellar ligament was distended from the articulation. Lateral view not shown in this article. The only bony change visible was a slight separation of the tibial tubercle. The diagnosis in this case was that of Schlatter's disease. The knee was placed in a plaster cast fully extended. There was no relief from the immobilization and it was necessary to split the cast to relieve the tension in the knee-joint. The knee-joint was aspirated and showed a clear yellowish fluid. (It must be emphasized at this point that fluid in large quantities when left in the knee-joint for any length of time, tends to stretch the ligaments upon which the knee-joint is dependent for its stability. It is, therefore, advisable to aspirate the knee from time to time to avoid this accident. It must be borne in mind that infection from such procedure is not uncommon, so that asepsis must be observed to the superlative degree.) The pain in the knee-joint was not relieved and atrophy of the muscles above and below the knee-joint became very marked. An x-ray picture taken about a month later revealed a cavity the size of a ten-cent piece in the intercondylar notch and operative procedures were contemplated to determine the possible pathology. There was nothing in the history to throw any light upon the case and tumor of the knee-joint



Fig. 4(a). Separation of femoral epiphysis. Boy, 10 years old, experienced a sudden pain on inner side of knee after kicking at football. The pain was not very severe but constant. The knee became swollen; there was a limitation to extension and considerable pain at forcible extension. The pain was worse at night and sleep was disturbed. There was a history of old tuberculosis glands of the neck with marked malnutrition. Tuberculosis was suspected. X-ray shows no involvement of articular surfaces but separation of femoral epiphysis. The pain disappeared after immobilization for six weeks.

Fig. 4(b). Hereditary syphilitic erosion of intercondylar notch in a boy 16 years of age following a slight twist of knee, simulating sarcoma.

Fig. 4(c). Myositis ossificans. Injury of knee-joint with swelling, redness and pus formation. The knee-joint was drained. Ankylosis followed. Examination four years later shows the formation of myocytes. Operation was performed. Myomectomy of all the anterior muscles. No further process three years after operation.

was a tentative diagnosis until the routine Wassermann examination was made at the hospital, which showed a 4+ positive. This shows the value of a routine Wassermann examination in every obscure joint condition, regardless of the history. We are so disposed to call any rapidly growing tumor in the long bones associated with increased point and effusion a sarcoma and the possibility of syphilis is often overlooked. The patient made an uneventful recovery and



Fig. 5. Osteochondromatosis following a fall upon the bent knee. The history is that of a torn cartilage. Locking occurred at frequent intervals. Removal of central body relieved all symptoms. No recurrence of symptoms after three years. This case illustrates the formation of osteo-corlitaginous bodies as a result of a torn cartilage.

the rarefication in the femur has completely filled out after several injections of salvarsan. X-ray not given in the article.

Case 3. This patient is a young woman who sustained an injury to her knee-joint in an automobile accident. On examination of the left knee-joint, it was found that she had considerable deviation of the leg with a marked sliding forward and backward of the tibia, extreme lateral mobility and considerable effusion. The diagnosis of fracture of the outer —berosity of the tibia with a torn lateral ligament and a possible separation of the crucial ligaments was made prior to radiographic examination. The x-ray confirmed the diagnosis of the above named fractures.

Under anesthetic the leg was brought to a horizontal position with the knee in extension, and was immobilized in a plaster paris cast for eight weeks. The cast was removed at intervals for massage and passive motion.

The result is a useful, stable knee-joint with a slight degree of abduction. This case is shown to bring out several points; first, that in extreme tears of the soft structure operative interference is often unnecessary. Immobilization in plaster for six weeks is sufficient to bring about union of these parts. The other point is that rupture of the crucial ligament with separation of the tibial spine, as is shown in this case, often needs no operative interference. Immobilization of the knee-joint in an extended position will bring about union of this structure, and will reestablish stability of the joint. Rupture of the crucial ligament does not occur without fracture of the tibial spine, and it is doubtful if a plastic operation upon this structure is followed by satisfactory results.

Case 4. This case does not belong to the classification of derangements or of disturbances of the knee-joint, but presents several striking points of interest from the clinical as well as from the pathological point of view. The case was primarily an osteomyelitis of the tibia, involving the diaphysis, immediately below the epiphyseal plate. It has been shown that osteomyelitis involving the diaphysis of the knee-joint tends to extend along the periosteum, secondarily involving the shaft (Starr[5]). The epiphysis acts as a barrier to the invasion of the knee-joint, and it is only in neglected cases or through careless operative procedures that the knee-joint is secondarily involved. You will notice from the accompanying radiograms the extent of involvement of the joint and the progress of the case. The primary operation consisted in an incision to the tibial epiphysis. This was not large enough to permit drainage. A second operation was, therefore, undertaken, and the surgeon extended his

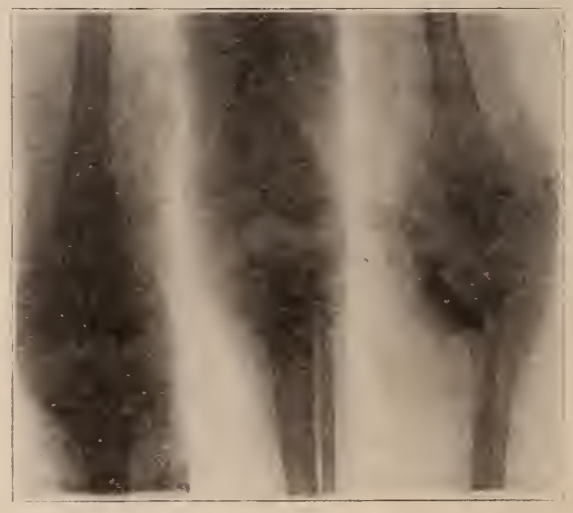


Fig. 6(a). Osteomyelitis involving tibia following a fall. Symptoms were referable to the knee-joint.

Fig. b. Same as (a), further progress in 30 days as a result of inadequate drainage.

Fig. c. Same as (a) and (b), shows marked involvement of knee and permanent drainage inserted, *a practice to be condemned.* Arrow points to drainage tube.

incision through the epiphysis, into the knee-joint, making the condition very severe. You will note from figure that drainage was instituted and permitted to remain in the knee-joint. This was accompanied in a very short time by a flexion deformity, extreme angulation of the knee-joint and ankylosis. Moynihan states that it was rare to see in the base hospitals in

England a movable knee-joint when tubes have been used within the cavity of the joint.

One is inclined to believe that we have learned a lesson from permanent drainage of the knee-joint; but we still see the practice continued. The synovial membrane of the knee-joint is very susceptible to irritative trauma. Drainage tubes cause an irritative plastic exudate with fibrous tissue formation and destroys the usefulness of the joint by formation of adhesions. When the knee is involved by infection the incision must be large enough and extension must be instituted early so that the articular surfaces are separated.

Conclusion. The knee-joint of all joints in the body is generally least understood; it is more wrongfully diagnosed, and its pathology most shamefully mistreated. Any joint can be corrected to give a functional result. An anklyosed hip can be made mobile; a flail shoulder can be ankylosed to give usefulness; a stiff elbow can be reconstructed, but an ankylosed knee is still associated with doubtful operative results. It is the only joint in the body, without exception, which yields so little from a plastic standpoint. A flexion deformity makes the knee practically useless; an extended stiff knee is an uncomfortable hindrance—a stumbling block for everybody—and a flail knee is a care. One must do everything in one's power to avoid a flail knee. This condition can be avoided by frequent aspirations, as exudates tend to weaken the supportive structures of the knee joint. One must not allow ankylosis by instituting early traction, thus keeping the articular surfaces separated. One must not allow flexion deformity by keeping the knee-joint extended, thus avoiding shortening of the posterior capsule, making correction difficult. It is a wrong practice to send a knee-joint case to the radiologist and accept his interpretation as final. A negative x-ray finding is what one expects in derangements due to semilunar cartilage displacements, and last, early motion is imperative.

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SMARTER THAN HE LOOKED

A psychiatric board was testing the mentality of a weak-faced negro soldier. "Do you ever hear voices without being able to tell who is speaking, or where the sound comes from?"

"Yes, suh," answered the negro.

"When does this occur?"

"When I'se talkin' over de tele-telephone."

Book Reviews

An Introduction to the Practice of Preventive Medicine. By J. G. Fitzgerald, M.D., assisted by Peter Gillispie and H. M. Lancaster. St. Louis. C. V. Mosby Company, 1922. Price, $7.50.

During recent years preventive medicine has achieved great importance. The author has covered the subject thoroughly in this work of 800 pages. The author correctly states that the general health of the individuals in the community can best be looked after by well qualified physicians in general practice.

Physical Exercise for Invalids and Convalescents. By Edward H. Ochsner, M.D. Second Edition. St. Lopis, C. V. Mosby Company, 1922. Price, .75c.

While primarily written for the convenience of the author the work fills a long felt want for a short, compact, easily comprehended, convenient and inexpensive manual describing concisely but clearly exercises which can be executed, without apparatus in the patient's own room, and at any time convenient to the patient.

The Surgical Clinics of North America.—December, 1922. Vol. 2, Number 6, St. Louis Number. Index Number. Published bi-monthly, Philadelphia and London. Price per year, $12.00.

The contributors to this number are Drs. Nathaniel Allison, Fred. Warren Bailey, Willard Bartlett, Barney Brooks, William T. Coughlin, George Gellhorn, Evarts A. Graham, Roland Hill, Harvey S. McKay, Ernest Sachs, M. G. Seelig, Frederick J. Taussig.

Life Shortening Habits and Rejuvenation. By Arnold Lorand, M.D., Philadelphia, F. A. Davis Company, 1922. Price, $2.50 net.

Part One deals with the ten chief life shortening habits. Part Two with the rapid ageing of women, and Part Three with rejuvenation. The work is written in fascinating style and the reader is amply rewarded by a remarkably clear and comprehensive presentation with the various restorative agencies and their practical and effective application in rejuvenation.

I Believe in God and in Evolution. By William W. Keen, M.D., Philadelphia and London, J. P. Lippincott Company. Price, $1.00.

In passing upon the merits of this work we feel that the subject can be no more tersely stated than in

the language of the publishers as follows: "To all sincere seekers after truth; who revere the bible as the word of God; who revere nature as the work of God; who believe that rightly interpreted they must surely agree." Thus does the author dedicate this volume and in the pages which follow proves that the facts of Evolution do "agree" with spiritual truth. He sets forth proofs which verify the theory that man ascended from the lower animals and then with brilliant logic shows that the principles underlying both science and the scriptures harmonize completely. The questions relating to the origin of man which have perplexed so many religious students are answered in this masterful work.

Regional Anesthesia. By Gaston Labat, M.D., lecturer on Regional Anesthesia at the New York University; Laureate of the Faculty of Sciences, University of Montpellier; Laureate of the Faculty of Medicine, University of Paris; formerly special lecturer on Regional Anasthesia, The Mayo Foundation, University of Minnesota. With a foreword by William J. Mayo, M.D., octavo of 496 pages with 315 original illustrations. Philadelphia and London, W. D. Saunders Company, 1922. Cloth, $7.00 net.

The object of this work is to afford the opportunity of acquiring rapidly a practical knowledge of regional anesthesia and to teach the reader how to use the method successfully. The value of local anesthesia as a substitute for general narcosis for minor operations is universally admitted; but its possibilities in major surgery are so limited that it is necessary to have recourse to another method of with broader horizons. Regional anesthesia fulfills the best conditions hitherto offered for the accomplishment of the most delicate and elaborate surgical procedure. We highly recommend this work to the medical and surgical profession.

Society Proceedings

COOK COUNTY

CHICAGO MEDICAL SOCIETY

Regular Meeting, December 6, 1922.

1. Report on Cases of Testicle Transplantation.—Charles Morgan McKenna.
   Discussion—Professor A. J. Carlson, University of Chicago.
2. Laryngeal Neoplasms.—Charles Moore Robertson.
   Discussion—Edwin McGinnis.
3. Corneal Injuries in Industrial Occupations.—Frank Allport.
   Discussion—Willis O. Nance, C. C. Clement.

Regular Meeting, December 13, 1922.

The Value of Ventriculography.—A. W. Adson, Rochester, Minn.

Discussion—L. L. McArthur, Geo. W. Hall, Loyal Davis, Geo. L. Davenport, Peter Bassoe.

CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY

The regular monthly meeting of the Chicago Laryngological and Otological Society was held in the Rose Room of the Hotel Sherman, on Monday, February 6th, 1922.

The President, Dr. Robert Sonnenschein, in the Chair.

ABSTRACT

Presentation of Cases and Instruments:

Dr. H. C. Ballenger presented a patient with two canine teeth which had extended up into the septum. She had come in complaining of nasal discharge and crusting and these teeth were found incidentally. She gave a history of all the first teeth having to be pulled with difficulty. Although the girl was twelve years old all of the upper molars were still the first teeth. The Wassermann reaction was positive. Apparently of the hereditary type.

Dr. John A. Cavanaugh presented an instrument devised for removing the anterior wall of the sphenoid.

This instrument was an electrically driven burr which is hooded so that there is only one cutting surface. There is a mark on the handle so that one can tell at all times just where the cutting surface is located. With this instrument the thick lower wall can be removed, and better drainage obtained, than can be had by any biting forceps.

Dr. G. W. Boot presented a forcep devised for removing peanuts and similar fragile bodies from the bronchus. The instrument was very light and preserved the sense of touch.

Dr. Norval H. Pierce addressed the Society on: "A Skiagraphic Study of the Temporal Bone in Relation to Normal and Abnormal Pneumatization.

Dr. Pierce stated that since 1917 when Wittmaack's book appeared in Germany he knew of no work that has proved or disproved his results. Nearly five years have elapsed and nothing has yet been published that would disprove his conclusions.

Wittmaack divided the pneumatization of the temporal bone into three stages; the first stage covers the first year or thereabouts and consists in the pneumatization of the cavum and the antrum. Up to this time there is no pneumatization of the mastoid process. At the end of the first year and the beginning of the second pneumatization begins in the mastoid and at the end of the fifth year should be complete under normal conditions. These cells, the concentric and excentric, form the antrum. The third stage lasts through life. As long as a man lives, if there is no arrest in pneumatization due to inflammation which occurs in the first years of life, his mastoid progressively pneumaticizes and this process occurs as it does in the original process, by the invasion of marrow spaces from pre-existing pneumatic spaces. This process has been discovered in men as old as seventy.

The pneumatization of bone is really of secondary importance in the process to the changes which take place in the mucous membrane. In order that a pneu-

matic space may be formed it is absolutely necessary that the epithelium shall gain entrance to that space. Otherwise, no space can be formed. In many of these spaces there is the marrow space invaded by this submucous myxomatous tissue, but unless the epithelium penetrates into it this myxomatous tissue changes, after it causes the absorption of the marrow proper, into connective tissue and when this occurs instead of the marrow spaces being absorbed, there is apposition of this connective tissue and we have the process of sclerosis occurring. In this way the sclerotic bone originates. It is not due to long-continued suppuration but to a failure in normal pneumatization of the mastoid process. Although the red marrow spaces stand at hand ready for the invasion of the myxomatous tissue, nothing of the kind takes place.

What has formerly been called tubo-tympanal catarrh depends on the arrested pneumatization, and we gain knowledge by Roentgen study of the condition of the mucosa because when there is arrested pneumatization we know of necessity that there must be a certain type of submucous tissue, because the condition of the submucous tissue is what has arrested the pneumatization. When certain changes have taken place the epithelium is unable to go down into the bone in order to pneumatize it. In all these cases we have a hyperplastic condition.

In the acute inflammation these cases never come to a frank mastoiditis. That is easily understood, because the anatomical parts are not there for the production of this picture; namely, large, well distributed pneumatic spaces.

In the rather arrested pneumatization there is an entirely different picture. We do not find the spaces that are found in the perfectly pneumaticized mastoid. Instead there is a large mass of bone, and if cells are formed those cells have very thick walls which are very much more resistant to the softening process, naturally, than the very thin, delicate walls of the pneumatic spaces in normally pneumaticized mastoid bone. Not only that, but this hyperplastic tissue is a protection in itself from the bone. In the normal case there is a very thin mucosa, and in the arrested pneumatization a very thick hyperplastic mucosa. In these cases we have the chronic, running ears after this invasion, not a frank mastoiditis. The discharge comes from the tube, from the cavum and from the antrum but the bone itself seldom softens.

Dr. Pierce disagrees with Wittmaack in that he has found numerous cases of partially arrested pneumatization in which symptoms have developed which threatened the life of the patient because of the invasion of neighboring parts, principally the sinus. These are only in partially arrested pneumatization. In the totally arrested cases it is rare that an involvement is found of either the labyrinth, the cranial cavity or the sigmoid sinus by extension of the softening process, as would occur in very slightly arrested pneumatization, or in normal pneumatization. In those cases we do have involvement of the sinuses, but this is by way of the vascular system. The abnormal pneumatization of these vascular remnants between the cells and the blood vessels or meninges occurs and one must give a very careful prognosis in these cases. The vascular connection is probably beyond operative skill.

Dr. Pierce believed these very valuable conclusions could be drawn from skiagraphs. We can tell whether the mucosa is thin. We can tell whether pneumatization is complete. We can tell whether the pneumatization is complete with hyperplastic mucous tissue. We can tell whether there is incomplete pneumatization with a hypertrophic mucous membrane. We can tell whether there is incomplete pneumatization with fibroid mucosa, and all of these have great bearing as to our prognosis and our treatment. For instance, if we have a running ear, without cholesteatoma and with greatly arrested pneumatization, we may know that such a case does not of necessity require operation. That discharge does not come from bone because we know that the bone in these cases is highly resistant. We know that the discharge comes from the highly plastic mucous membrane. We know that in these cases softening is not likely to occur, and if we do operate the only thing to consider is a radical operation. If we do not do a radical, then we do not drain the cavum and if we do a radical then we cannot remove the thickened, hyperplastic tissue of the cavum and the tube. And unless we are quite sure of our technic of closing the mucosa in the cavum we still have an ear that discharges as much as before, and we will have operated on a case that was not dangerous, and will not have improved the patient at all.

DISCUSSION ON PAPER OF DR. NORVAL H. PIERCE

Dr. Joseph C. Beck agreed with Dr. Pierce that radiographic study should be of the greatest value in connection with the work. He did not believe that Dr. Pierce thought that by means of the x-ray one could determine exactly the type of mucous membrane, but only by interference from the bony changes which were present.

After receiving the book of Wittmaack's and discussing it with several authorities in this country Dr. Beck had written and asked Dr. Wittmaack what he would think of having his book translated into English. Dr. Wittmaack was anxious to have this done and had given permission for the plates to be used in this translation, and the work is now being done by Dr. Bigelow of Providence.

Dr. J. Holinger said the work of Wittmaack explains many points, for example, in the formation of cholesteatoma, but it is questionable whether the conclusions that the whole process of arrested pneumatization is caused by entrance of amniotic fluid into the middle ear at birth can be sustained. Amniotic fluid is in the naso-pharynx, eustachian tubes, trachea, and is hardly able to have such deleterious influences.

Dr. G. W. Boot thought that instead of the chronic, catarrhal ear being the result of the myxomatous tissue it might be the other way around and that because of the air not entering the cavity the submocous tissue was not absorbed.

Dr. Alfred Lewy thought the observations of Dr. Pierce must all be subjected to clinical checking up, and he believed it would take a great deal of clinical investigation to determine whether the failure of pneumatization was always the result in incurable ear conditions, or was always the underlying cause.

Dr. Lewy had recently had under observation what appeared to be a thoroughly pneumatized mastoid, which according to the x-ray picture had cells extending into the zygoma and even into the squama, but on operation no cells were found in the zygomatic or squamosa regions, merely

diploetic bone, so we must be careful in interpreting our x-ray pictures.

Dr. G. E. Shambaugh called attention to the symmetry usually existing between the mastoid process on the two sides. For that reason he was not ready to accept the view that the extent of pneumatization or even its complete absence is necessarily always dependent upon the otitis media. He was willing to accept the view that chronic suppurative otitis media occurring before pneumatization has taken place prevents this from developing. The reason why non-pneumatic sclerosed processes are found in connection with chronic discharging ears is due often to the fact that pneumatization is prevented because of the chronic suppuration. He believed that in acute otitis media with an involvement of the penumatic spaces, the membrane lining the air cells undergoes inflammatory thickening leading eventually to the genuine sclerotic process.

Dr. Shambaugh also called attention to excessive pneumatization as the direct opposite of the conditions discussed above. Pneumatic cells develop at a distance from the confines of the mastoid process. For example, around the tympanic orifice of the eustachian tube internal to the digastric groove and toward the apex of the petrus bone. He has seen cases where the skiograph showed pneumatization spreading back to the torcula.

Dr. John A. Cavanaugh thought the marrow spaces which Dr. Pierce pointed out resembled the bistological specimens of otosclerosis. The anterior part of the oval window according to Huxley is developed from the opistbotic osseous centers, and this Dr. Cavanaugh thought is arrested in the process of development, and later on, starts the production of bone cells. He has been working on cats, about one month old. Dr. Cavanaugh thought some of the pictures shown were very similar, and that it might have some bearing on the cause of otosclerosis.

Dr. Robert Sonnenschein said that Dr. Pierce's reference to the absence of a frank mastoiditis in the cases of arrested pneumatization was well borne out in a case under observation for several years, a patient Dr. Pierce had also seen several times. This patient was a boy of seven; at four years he developed an otitis media, had another attack at five and another last year. Each attack begins with very mild rhinopharyngitis. A parencentesis is done and a diffuse discharge begins. This condition persists for about ten weeks. After each onset the patient entirely recovers until the next attack. The pictures taken during the last one showed the arrested pneumatization.

Dr. Sonnenschein thought it was unfortunate that Dr. Pierce could not show all of his x-ray plates and thanked him on behalf of the Society for his excellent presentation and for so extensively studying the subject.

Dr. Pierce (closing the discussion) said that the picture he showed of a man of sixty might well be considered that of a child of a year and a half. There was not a single area in the bone which one could possibly imagine to be a pneumatic space that had been closed up by sclerosis.

He agreed with Dr. Hollinger that it was well to keep away from cholesteatoma because this was an entirely different problem. The explanation of Wittmaack was the most intelligent explanation we have at present.

As to the causation of this trouble, the entrance of amniotic fluid into the tube acting as a foreign body, Dr. Pierce thought was the best explanation we have at present, and it is known that several observers who have performed thousands of autopsies on infants have found this condition present. Long before they associated it with arrested pneumatization they found all these histological changes present, and Wittmaack had said that on account of the small size of the children's clinic at Jena it was difficult for him to find a normal pneumaticized bone,—that they were practically all types of arrested pneumatization. All observers have put the process of otitis media neonatorum at from 85 to 90 per cent of infants. Zuckerkandl's description of the three types of mastoid which have hitherto been regarded as normal, the mixed type, the sclerotic type and the rheumatic type, gives statistics which are not far off from the statistics of Wittmaack. The infant mortality must also be considered. Many of them do not grow to manhood. Insurance statistics and vital statistics might clarify the question somewhat as to how many children die in infancy. Dr. Pierce said he was not an advocate; he did not believe that the causation had been proved. As Dr. Lewy said at the last meeting, it might be due to abnormal secretion of the endocrins. The ears are sterile in the great majority of cases and the bacterial infection is due in the great majority of cases, where the inflammatory element is introduced which produces certain changes, to the pneumococous.

Dr. Shambaugh had called attention to the symmetry of the mastoids but Dr. Pierce could prove by at least four of his plates that asymmetry occurs with relative frequency. In one there was partially arrested pneumatization and in the other ear almost totally arrested pneumatization.

As to the entrance of air into the cavum causing this disturbance, this was unthinkable to him. This process takes place in birds as well as in humans and he believed this did not enter into the consideration.

As to Dr. Cavanaugh's trying to mix this proposition up with oto-spongiosis—not oto-sclerosis, which Dr. Pierce thought should be stricken out of medical literature—he believed oto-spongiosis had nothing to do with sclerosis. That is changing the bone into spongy tissue and Wittmaack has been particularly careful to say that this process has nothing whatever to do with oto-spongiosis.

Dr. Frank J. Novak, Jr., presented his inaugural thesis, entitled: "Electro-Coagulation in the Treatment of Carcinoma of the Larynx."

ABSTRACT

Briefly stated, the advantages of electro-coagulation in the treatment of malignant tumor of the larynx are the following: The operation is bloodless; there is an immediate lessening of pain; there is no danger of dissemination of metastases. The deep penetration of the heat has an inhibitory effect upon the growth of malignant cells beyond the area of coagulation, as has been shown by Rhodenburg and Prime experimenting with neoplastic cells in vitro.

Corbus and O'Conor have by animal experimentation found that the body defense against carcinoma metastasis lies in the formation of a connective tissue capsule. The scar tissue that is formed after a diathermy burn is more dense and spreads farther into the surrounding tissue than is the case after any cutting operation. Consequently, there is a more extensive reinforcement of Nature's attempt to throttle the embryonal cell.

The author summarized as follows:

1. Diathermy of carcinoma of the larynx is a relatively untried measure. It offers a promising field for investigation.

2. It not only coagulates the tumor mass, but has an inhibitory effect upon the growth of malignant cells adjacent to or at an appreciable distance from the tumor.

3. Chloroform is the logical choice of anaesthetic.

4. The larynxgeal tumor should be approached by means of suspension laryngoscopy.

5. The amount of current—the length of exposure necessary requires considerable experience upon the part of the operator, because no set of definite rules of procedure can be formulated in the light of the present limited knowledge of the subject.

6. Radical dosage cannot be recommended.

7. The edema following diathermy is surprisingly

slight, nevertheless preliminary tracheotomy is imperative.

8. Pain is diminished markedly following coagulation.

9. Diathermy should be supplemented by radiation.

DISCUSSION

Dr. A. B. Kauffman emphasized the advantages of disthermy in the treatment of carcinoma in general. One important factor about diathermy is that ita cts on the so-called migratory cells and thus reduces the possibilty of recurrence. Malignant cells are known to be destroyed by heat at about 50° C. and the normal by 60° C. Using this as a working basis one has in addition to the zone of coagulation another zone at the periphery where the heat is raised to about 50°, which will inhibit the growth of the cells in the normal tissue.

Dr. Kauffman thought one of the dangers lay in using too strong a current and that there was also the danger of attacking the larger vessels and nerves in the vicinity. One must be very familiar with the technic used• and with the amperage which may be used with safety on the different tissues. Fat is very penetrable and the cartilage is more resistant, thus prevcnting the penetration of heat into the tissues which appear healthy and normal, but which in the lymph tissue and ducts contain the migratory cells which later may become veritable germinal centers for recurrence of the malignant cells.

Dr. Joseph C. Beck thought that anyone who wished to do something for carcinoma in any part of the body could feel encouraged from this presentation. He agreed with Dr. Novak that time will show just what can be accomplished.

Dr. Beck again presented the man who was shown at the January meeting to demonstrate the improvement in the voice with the use of the artificial larynx of Bruns. He believed that if a patient lived through a laryngectomy and could use this appliance so that he could talk intelligibly he should be satisfied with the result.

Dr. Alfred Lewy said he had been afraid to undertake this work in the larynx because of the supposed danger of aspiration of infection from the slough which follows this operation. His method was a little different from that of Dr. Novak. He had used hyoscin, morphin with ether anesthesia, using very little ether, which was always withdrawn for a minute or two before the operating electrode was inserted, and he used a large needle instead of a flat electrode. This had the advantage of requiring less amperage in order to obtain the same results. An area of about one centimeter in diameter around the needle is coagulated in perhaps two or three seconds instead of twenty, so the question of vapor obscuring the sight hardly arises. The relief from pain in one case was marvelous. The patient had hardly been able to swallow even liquids for about a month, but the day following the operation he was able to eat a square meal. The three other cases were practically not relieved until after the slough separated.

In January this year he had shown a patient who was operated some sixteen months before and was in good health with no sign of recurrence or metastasis. Another patient had no recurrence in situ, but died of metastasis after nine months of complete relief so far as the throat was concerned. Of the other two one had been extensively rayed before trying the coagulation but without effect. The other, who had a growth involving the side of the tongue and floor of the mouth, went on from bad to worse. Dr. Lewy believed this method would prove a valuable addition to our armamentarium in the treatment of carcinoma especially of the mucous membranes. He asked Dr. Novak how far back his cases dated, and whether or not aspiration pneumonia had occurred in any of them.

Dr. Samuel Salinger believed that Dr. Novak deserved much commendation for taking an interest in these cases, most of which were absolutely beyond the hope of surgical intervention. He had seen several of them at the County Hospital and thought Dr. Novak was very modest in withholding his results obtained so far. He knew of two cases in which the progress of the growth was arrested, the patients were much more comfortable and had begun to take on weight. Dr. Salinger thought this particular method of attacking malignant growths in the larynx was more applicable to the advanced cases than the early ones. He still held to surgical intervention in the cases that are intrinsic. He believed there was great danger of hemorrhage from diathermy in the pharynx, and knew of one case that came to a fatal termination shortly after treatment. Whether the diathermy was directly the cause, or whether the malignancy had already reached the large vessels he could not say.

Dr. Norval H. Pierce asked what the probabilities were of stricture of the larynx developing. If it was true that diathermy caused the production of connective tissue, was there not danger of stenosis occurring even without stopping the growth of the carcinoma.

Dr. Frank Novak, Jr., (closing the discussion) said that so far no case had developed an aspiration pneumonia. He had three cases of carcinoma of the tonsil, four of the tongue and four of the larynx, and one of the palate. Regarding the use of the needle instead of the electrode he used; there is a greater possibility of carbonization with the needle with a resulting interference with the penetration of heat. His cases had been under observation for about six months. Dr. Novak did not agree with Dr. Salinger that the method was more applicable to the late than to the early cases because the late cases of carcinoma are hopeless from any standpoint. In his opinion the most suitable case is the early one, where the growth is circumscribed and limited and any invasion of the lympathic tissue in the vicinity of the tumor by the migratory cells can be coped with by the deep penetration of heat.

Replying to Dr. Pierce, he thought his remarks were interesting, but so far he had not seen any stricture. The scar that is formed is smooth and if one can go by the results obtained by the urologists in work in the bladder, the possibility of stricture is remote. They have found that they can use this method in bladder in the immediate vicinity of the ureters without causing any stricture. The opening persists and no stricture results. He thought it would be possible to tell more in this regard at a later date.

GREENE COUNTY

The Greene County Medical Society met in Roodhouse Dec. 8, 1922, with twelve members and two visitors present. The Society was called to order at the office of Dr. Smith, before the dinner hour, for the election of officers. The following named were declared elected for the ensuing year: President, Dr. J. A. Cravens, of Greenfield; Vice-President, Dr. W. C. Tunison, of White Hall; Secretary-Treasurer, W. T. Knox, of White Hall; Censor, Dr. W. W. Billings of White Hall. After dinner at Todd's restaurant, the meeting resumed at the Dreamland Theatre for the program and other business. Dr. F. A. Norris of Jacksonville presented a paper on the Surgery of the Upper Abdomen, with lantern slides that was highly appreciated by all present. Special emphasis was placed on ulcers of the stomach and diseases of the gall bladder. Dr. Robert Barclay of St. Louis read a paper on the Treatment of Chronic Catarrhal Deafness and Chronic Ear-discharge,—the former, under conventional methods, usually regarded as hopelessly incurable, the latter, usually, as possibly curable only by the conventional cortical mastoid operation. He stated that many cases of the former, especially those that spoke habitually in an abnormally moderated or low tone of voice, yet heard better in a noise or noisy place—as in a moving car, were readily curable by an

immediate and painless method; and that the latter, frequently were susceptible of immediate relief by painless operation by way of the external auditory canal, including the mastoid antrum opening and drainage, without subjecting the patient to the horrors of the cortical operation and all its dangers and possible complications. He cited cases that had been previously hopeless, under conventional methods, for 20 to 34 years and more, one of them for 74 years, that had been relieved by this improved method, immediately and painlessly, who had remained entirely relieved of all these symptoms, with hearing,—for example, for whisper at 10 to 39 feet distance—as good as, if not better than when first relieved, 15 to 25 years and more ago in some cases. The steps of the modern method were carefully described and cases of his own and others cited to demonstrate its practicability and effectiveness. The doctor has devoted his practice to ear-diseases for the past 40 years, and is the author of a paper on this subject in the 1893 first edition of Burnett's "System of Diseases of the Ear, Nose and Throat" under the caption of "Dissecting Tympano-Mastoid Abscess." His contributions to the literature of Otology are many, and the instruments of his invention varied, for aural surgery. The paper which was one full of original research, was illustrated by plates, quotations and pictures from the most eminent authorities in anatomy and otology.

Dr. Knox presented a paper on the use of various drugs—under the caption, "Are drugs ever necessary?" He showed that in many cases drugs proved actually life-saving, and that of a most marvelous relief. A case of a man with the most excruciating pain, deathly pale, in extreme agony, suffering from renal colic, a hypodermic of morphine is administered quickly. In a few minutes patient quiets down, he passes a considerable amount of gravel and is apparently well.

All papers were discussed by all present.

The meeting was pronounced a very profitable and enjoyable one, one of our best.

The subject of incompetent operators of the x-ray was brought before the Society. The medical profession can do much to combat this evil, by sending their work only to graduates of medicine. Motion covering this was offered; action on same was deferred until next meeting. The campaign of the State Society in the solicitation of funds for the purpose of carrying on a lay publicity campaign through the newspapers of the state was brought forward and freely discussed. The consensus of opinion was that this society would be opposed to competing with the cults, the osteopath and chiropractor in advertising. They make free use of the local papers, billboards, blotters, hand-bills, paper bags, fans and many articles of home use, that are distributed free to the public. In the small city of White Hall of 3,000, we have one osteopath and five chiropractors.

A standing vote of thanks was given to all who presented papers.

On motion the meeting adjourned to meet at Carrollton on the second Friday in March.

W. T. Knox, Secy.

Marriages

Arthur Reuben Bogue, Rochelle, Ill., to Miss Rosalind Victoria DeOn of Chicago, November 19.

Jacob Faltermayer to Miss Ethel Kimnach, both of Chicago, November 24, at Crown Point, Ind.

Henry Bernard Hibbe, Oak Park, Ill., to Miss Marjorie McCollins of Davenport, Iowa, at Dubuque, recently.

Maurice B. Karatz to Miss Esther Hannah Shlensky, both of Chicago, November 14.

Personals

Dr. H. Horace Long, Orion, is retiring from the practice of medicine.

Dr. Alan G. Brooks has been appointed city physician of Robinson to succeed Dr. Leroy Newlin.

Dr. B. Barker Beeson, Chicago, has been elected a corresponding member of the Société Anatomique de Paris.

Joseph F. Miller has been appointed superintendent of the Methodist Hospital of Central Illinois, Peoria.

Dr. Carl O. Young, Chicago, sailed December 2, on the White Star liner *Arabic* for Mediterranean ports.

Dr. Michael Nelson, Chicago, sailed on the *Helig Olav* for Christiania and Copenhagen, November 30.

Dr. Daniel N. Eisendrath read a paper before the Academy of Muncie, Ind., December 15, on "Diagnosis and Treatment of Renal Calculi."

Dr. James G. Baker, Mattoon, has been appointed local surgeon for the Illinois Central Railroad to succeed Dr. J. T. McDonald, recently deceased.

Dr. Samuel A. Graham, Clinton, has been appointed managing officer of the Lincoln State School and Colony to succeed the late Dr. C. B. Caldwell.

Dr. James F. Percy, Galesburg, has been appointed attending surgeon to the Los Angeles County Hospital; he will move to California.

Dr. Edward K. Disney, formerly head of the Municipal Hospital, Louisville, Ky., has been appointed medical director of Oak Knoll Sanatorium, the tuberculosis hospital for Tazewell County, Mackinaw.

News Notes

—The St. Mary's Hospital, a new institution at DeKalb, has recently been opened.

—Plans for a $60,000 addition to St. Charles Hospital, St. Charles, have been announced.

—Plans have been completed for the erection of a hospital building at Bushnell at a cost of $100,000.

—The new 130 bed institution at St. John's Hospital, Springfield, is expected to be opened to the public in February, 1923.

—The Moline Physicians' Club is planning to establish a bill collecting agency for the purpose of rating patients and collecting from those able to pay, it was recently announced.

—The Robert Koch Society for the Study of Tuberculosis had for its guest, at the December 12 meeting, Dr. Edward Archibald of Montreal, Canada, who gave an address on "Personal Experience with the Operation of Extrapleural Thoracoplasty."

—At a recent meeting of the council of the Chicago Medical Society, under the presidency of Dr. Hugh N. MacKechnie, a resolution was passed to enlist the 6,000 physicians of Chicago and Cook County in a campaign against the use of narcotics.

—John H. Montgomery and William J. Knick, proprietors of a drug store in State street, Chicago, alleged to have conducted the largest illicit drug trade in the United States, were recently arrested after months of investigation by the federal authorities and are now on trial.

—Dr. J. S. Templeton, Pinckneyville, has been appointed district health superintendent to represent the state department of public health in Jackson, Perry, Jefferson, Randolph and Washington counties. This makes a total of twenty-one physicians attached to the field staff of the department.

—The supreme court of Illinois, in refusing a rehearing of the case concerning the will of Charles E. Haines of St. Charles, has brought to a close the fight for possession of a $600,000 estate brought by relatives of the deceased. Mercy Hospital, Chicago, which under the will was given two-thirds of the estate, will now receive its share of the funds.

—At the annual meeting of the Institute of Medicine of Chicago, December 11, the following officers were elected for the ensuing year: President, Dr. William T. Belfield; vice president, Dr. George H. Weaver; secretary, Dr. Ernest E. Irons, and treasurer, Dr. Joseph A. Capps. Dr. Ludvig Hektoen was elected chairman of the board of governors.

—With the year practically at an end, reports to the state department of public health indicate that the general communicable disease incidence will fall short of that for last year by more than 10,000 cases. To December 23, approximately 160,000 cases of all notifiable diseases had been reported from the state, as compared with 176,740 for 1921. Declines are especially noticeable in the incidence of diphtheria, scarlet fever, whooping cough, measles and smallpox.

—Attorney Thomas Gill has offered the library of his brother, the late Dr. George P. Gill, to the Winnebago County Medical Society, provided the society will assume responsibility of creating and maintaining a medical library in Rockford. Dr. D. B. Penniman, president of the medical society, appointed a committee to confer with other organizations on the matter of accepting Dr. Gill's library.

—It is announced that the directors of the Fenger Memorial Fund have set aside $500 for medical investigation. The research work should have a clinical bearing, and if possible it should be carried out in an institution that will furnish facilities and ordinary supplies free of cost. Applications with full particulars should be sent to Dr. Ludvig Hektoen, 637 Wood street, Chicago, before Jan. 15, 1923.

—The Peoria Medical and Surgical Society has purchased the Holly Dancing Academy on North Madison street, Peoria, and will move to the new location early in the new year, assuming actual possession next May. The association has been formally incorporated with Drs. Peter F. James, Fred C. Walker, J. D. Jennings, Kline M. Richardson, Harlan W. Long, W. B. Whipple and Louis Schwambach as directors. The association was formerly known as the Peoria Clinic.

—At the annual meeting of the state board of public health at Springfield, December 2, Dr. Edwin P. Sloan, Bloomington, president of the Illinois State Medical Society, was elected chairman of the advisory board of the health department, to succeed Dr. William A. Evans of Chicago. Mrs. Monroe of Quincy was elected vice chairman, and Dr. Thomas D. Doan, Scottsville,

secretary of the Marcoupin County Medical Society, was elected secretary.

—Dean Arthur D. Black of the Northwestern University Dental School, President Walter Dill Scott and Health Commissioner Herman Bundesen were the speakers at the formal opening of the new children's dental clinic of Northwestern University, December 13. The clinic has been established at a cost of $60,000, and a deficit of about $9,000 has been guaranteed by a Chicagoan who desires to remain anonymous. The operating room contains fifteen dental chairs, and there is a large playroom for the children awaiting examination and treatment.

—Plans for the Albert Merritt Billings Memorial Hospital for the University of Chicago have been completed. The building, which will occupy a city block, is expected to be one of the most modern institutions in the country. The buildings will be of domestic Gothic architecture in gray Bedford stone. Collidge and Hodgdon, Chicago, who drew up the plans for the Harvard Medical School buildings and several of the University of Chicago campus buildings, are the architects. The hospital has a fund of $1,100,000 for construction purposes. Dr. Frank Billings of Chicago has donated a medical library, and Mr. and Mrs. Epstein have given $100,000 for the erection of a dispensary.

—Following reorganization of the medical examining board of the state department of registration and education, under Director A. M. Shelton, reciprocal relations have been restored between Illinois and the states of Pennsylvania, Ohio, California and Kentucky. These states canceled reciprocal relations some months ago, when charges of irregularities were made against William H. H. Miller, former director of the department, who was removed from office by the governor.

—The Central Section of the American X-ray Society will hold its mid-winter meeting in Louisville on Saturday, February 24th, 1923, for one day including an evening session. All members of your Association are invited and those interested in x-ray work are urged to attend, as we feel they will be well repaid for one day's absence from their office. Officers: E. C. Ernst, St. Louis, Mo., president; J. T. Murphy, Toledo, Ohio, first vice president; B. R. Kirklin, Muncie, Ind., second vice president; D. Y. Keith, Louisville, Ky., secretary.

—The following officers were elected for 1923 for the Champaign County Medical Society, at the annual meeting held on December 14, 1922: President, Dr. Cleaves Bennett, Champaign; vice president, Dr. E. S. Axtell, Gifford; secretary-treasurer, Dr. Edwin Draper, Champaign; medical defense, Dr. T. J. McKinney, Champaign; delegate to state meeting, Dr. D. E. Yantis, Urbana; alternate, Dr. L. T. Gregory, Urbana.

—Pasteur Memorial meetings were held by the State Department of Health in Springfield, December 26, in the senate chamber of the State House and a banquet was given by the Chicago Medical Society and other scientific bodies, December 27, at the Congress Hotel. At the latter meeting Dr. Ludvig Hektoen presided. Archbishop Mundelein offered the invocation and addresses were given by Dr. Victor C. Vaughan and by Mr. Barthelemy, French consul. It is reported that President Millerand presided over a memorial ceremony at the Pasteur Institute in Paris.

—The North Central Illinois Medical Association held its 49th annual meeting in La Salle, December 5th, at the Kaskaskia hotel. Necrological reports on Drs. George N. Kreider, John A. Colbourne and John F. Crowley were read and the following papers were presented: "Causes of Failure in the Treatment of Duodenal Ulcers," by Frank O. Deneen, Bloomington; "A New Operation for Ulcer on Lesser Curvature of the Stomach," by Alfred A. Strauss, Chicago; "Diagnosis of Retrocecal Appendicitis," by E. S. Murphy, Dixon; "Disabilities of the Hip Joint in Children," by E. J. Berkheiser, Chicago; "Primary Lateral Sclerosis of Spinal Cord" (patient exhibited), by L. V. Urvanowski, La Salle; "Treatment of Placenta Praevia," by E. P. Cook, Mendota; "Simple Suggestions in Treatment of Fractures, Especially of the Patella," by H. M. Orr, La Salle. President R. E. Gordon delivered an address on "Reciprocity Among Physicians."

—October 1, the General Medical Foundation took over the plant, the students and the good will of Hahnemann Medical College. The school year had already opened, September 25, with 130 students in attendance. The new school will be known as the General Medical College of Chicago. The transition involved many profound changes. A new faculty was created and new

hospital affiliations made. The scientific faculty includes, among others, Prof. R. W. Watkins, Ph.D., from the faculty of the University of Chicago, as head of the department of anatomy; Prof. E. Avery Richmond, Ph.D., as head of the department of physiology; C. A. Dragstedt, M.D., Ph.D., physiology; Arthur Cohen, S.B., chemistry; F. J. Warner, A.B., M.D., anatomy; G. R. Love, S.B., M.D., pharmacology; J. B. Bennett, M.S., librarian. Among the hospitals giving clinics for the students through positions held by the faculty are: Cook County Hospital, Illinois Charitable Eye and Ear Infirmary, South Shore Hospital, Chicago General Hospital, Illinois Masonic Hospital, West Side Hospital, South Chicago Hospital and St. Luke's Hospital. Other affiliations will be made. A campaign for a $1,000,000 endowment is being planned.

—The state health department, Springfield, issued, December 3, what is stated to be the most drastic set of regulations regarding the control and suppression of venereal disease existant in any state. Governor Small was requested to permit the use of the $25,000 health department contingent fund to print and distribute these rules. Violators are liable to a fine of $200 and a jail sentence of six months. Persons who have exposed themselves to disease but who are found not to be infected, may be held as "suspected contacts" for the period of incubation of the suspected disease—ten days in the case of gonorrhea and thirty days when syphilis is suspected. Refusal of a suspected person to submit to examination by the health authorities "shall be prima facie proof that such person is infected and shall authorize and justify quarantine and isolation of such person." Under penalty of revocation of their licenses to practice medicine, no physician shall issue health certificates to any person known to be or suspected of practicing prostitution. Any person known to be a prostitute or any man consorting with a common prostitute or inmate of a house of ill fame shall be suspected of having venereal disease or of being an infective carrier. Druggists who sell preparations for the cure of venereal disease are required, under Rule 8, to report the name and address of purchasers of such preparations, unless the purchaser has a physician's prescription. Local health authorities may define the limits of the area in which diseased persons are to be isolated; and another rule specifies that such persons may not handle food stuffs, work in a barber shop, or practice medicine or dentistry. Full authority is given for the placarding of the residences of those having either suspected or known cases of venereal disease and of premises used for immoral purposes. Under the new regulations, names, addresses, sex, age, color, marital condition and occupation, and name and address of the infected person's employer, must be given. Health Commissioner Bundesen of Chicago stated that these rules will go into effect at once in Chicago.

Deaths

John Smith Barton, Cuba, Ill.; Eclectic Medical Institute, Cincinntai, 1878; aged 74; died, November 20, from paralysis.

Oscar J. Brown, DeKalb, Ill.; Bennett Medical College, Chicago, 1898; â Fellow A. M. A.; formerly an engineer; aged 66; died, November 23, at the Washington Park Hospital, Chicago, from myocarditis, following an operation.

Charles Burr Caldwell, Lincoln, Ill.; St. Louis University School of Medicine, St. Louis, 1905; a Fellow A. M. A.; managing officer of the Lincoln Home and Colony; aged 43; died suddenly, December 17.

Martin Lewis English, Geneva, Ill.; Chicago Homeopathic Medical College, 1889; aged 60; died suddenly, November 20, from heart disease.

Hannabal D. Fortune, Pleasant Hill, Ill.; Washington University Medical School, St. Louis, 1865; member of the Illinois State Medical Society; aged 81; died, November 28, from heart disease.

Charles Horace Francis, Chicago; Bennett Medical College, Chicago, 1894; a Fellow A. M. A.; associate professor of ophthalmology at the Chicago Polyclinic and oculist to the Chicago Union, Francis Willard and Cook County hospitals; member of the American Academy of Ophthalmology and Oto-Laryngology and the Chicago Ophthalmological Society; aged 51; died, December 16, from carcinoma of the bladder.

William E. Hall, Chicago; Rush Medical College, Chicago, 1878; aged 69; died, November 20, from uremia.

Harlan Hubbell, Laura, Ill.; American College of Medicine and Surgery, Chicago, 1906, aged 42; died, December 1, at the Peoria State Hospital, Peoria, from an overdose of a drug.

Charles Elias McCarty, Peoria, Ill.; College of Physicans and Surgeons, Chicago, 1903; aged 40; died, November 20.

James I. Henline, Bloomington, Ill.; College of Medicine and Surgery (Physio-Medical), Chicago, 1897; Hospital College of Medicine, Medical Department, Central University of Kentucky, Louisville,

1898; member of the Illinois State Medical Society; aged 54; on the staff of the Mennonite Hospital and St. Joseph's Hospital, where he died, November 28, following an appendectomy.

James T. McDonald, Mattoon, Ill.; St. Louis College of Physicians and Surgeons, St. Louis, 1898; a Fellow A. M. A.; aged 54; died, November 16, at a hospital in West Baden, from paralysis.

John A. Meskimen, Allison, Ill. (licensed, Illinois, 1878); Civil War veteran; aged 79; died, December 3, from senility.

John H. Mitchell, Mount Vernon, Ill.; Chicago Medical College, 1874; a Fellow A. M. A.; aged 72; died suddenly in his office, November 27, from heart disease.

Josephine H. Paine, Chicago, Hahnemann Medical College and Hospital of Chicago, 1904; aged 61; died, November 30, from pneumonia.

Herman Wilfred Pierson, Wheaton, Ill.; University of Wooster Medical Department, Cleveland, 1881; practitioner in Chicago, 1893-1921; aged 66; died, December 3, from heart disease.

Charles F. Poppele, Decatur, Ill.; Eclectic Medical Institute, Cincinnati, 1874; aged 82; died, December 7, from acute atrophy of the liver.

Henry H. Schuhmann, Highland Park, Ill.; Hahnemann Medical College and Hospital of Chicago, 1893; a Fellow A. M. A.; died suddenly, December 18, from heart disease. Dr. Schuhmann graduated in dentistry from the University of Michigan, Ann Arbor, in 1889; he was first president of the Chicago Dental Research Club and served also as senior attending dental surgeon to the Michael Reese Hospital, Chicago.

Christopher C. Webb, Warrensburg, Ill.; University of Maryland School of Medicine, Baltimore, 1881; member of the Illinois State Medical Society; aged 72; died, December 1, from cerebral hemorrhage.

Alfred Eugene Bradley, Colonel, M. C. U. S. Army, retired, Highland Park, Ill.; Jefferson Medical College, Philadelphia, 1887; a Fellow A. M. A.; died, December 17, in Montgomery, Ala.; aged 58; and was buried in Arlington National Cemetery with military honors. For his services as chief surgeon of the American Expeditionary Forces in France he was awarded the Distinguished Service Medal with the following citation: "For exceptionally meritorious and distinguished services as Chief Surgeon, A. E. F. He gave his utmost energy and undivided devotion to the duty of planning and organizing the work of the Medical Department in France during a period fraught with untold difficulties. To his foresight were largely due the successful operations of that department when it was called upon to meet the demands that were subsequently made upon it."

John Edwin Owens, Chicago; Jefferson Medical College, Philadelphia, 1862; died, aged 86, from bronchitis, at his home in Chicago, December 21. Dr. Owens was born in Charleston, Md., in 1836. Following his graduation he entered the medical service of the Union Army and was assigned to duty in Chicago. He became attending surgeon at St. Luke's Hospital in 1865, continuing in this capacity until 1912, when he became consulting surgeon. He was chief surgeon of the Illinois Central Railroad from 1869 to 1911, and of the Chicago and Northwestern Railway continuously since 1888. He also served as medical director of the Chicago Exposition in 1893. He was professor of orthopedic surgery in Rush Medical College from 1879 to 1882, of the principles and practice of surgery in the Women's Medical College from 1877 to 1883, and of the principles and practice of surgery in the Chicago Medical College. At the time of his death he was emeritus professor of surgery in Northwestern University. Dr. Owens was well known as a writer on surgical subjects and was prominent in medical and surgical organizations throughout the country.

William Edward Quine, Chicago, for thirty years professor of the principles and practice of medicine in the College of Physicians and Surgeons, died of angina pectoris at his home, December 7, aged 75 years. Dr. Quine was born in the Isle of Man in 1847 and came to Chicago with his parents in 1853. He received his medical degree from Northwestern University College of Medicine in 1869. Following his graduation he became professor of materia medica and therapeutics in his alma mater and held the appointment until 1883; in that year he was appointed to his professorship in the College of Physicans and Surgeons and held the appointment continuously until 1913, serving also from 1892 to 1913 as dean. He was prominent in the absorption of the medical school by the University of Illinois, which took place in 1913. He was president of the Chicago Medical Society in 1872, of the Illinois State Medical Society in 1904 and first president of the Institute of Medicine of Chicago in 1916. He was attending physician to the Cook County and Mercy hospitals from 1871 to 1883 and on the consulting staffs of St. Luke and Michael Reese hospitals from 1910 to 1922. From 1885 to 1889 he was president of the Illinois State Board of Health. Aside from his medical interests Dr. Quine had many activities. He built a hospital of one hundred beds for women in Chin Kiang, China, in honor of his deceased wife, who had served as a missionary in China. He also endowed four schools for girls in different parts of China, each named in her honor. He founded and for ten years supported the library of the College of Medicine of the University of Illinois, which has been named in his honor. In memory of his daughter he endowed a "Ruth Quine Deaconess" in connection with a benevolent institution in Normal, Illinois, founded by his mother. He also donated his former home to the Chicago Missionary and Church Extension Society of the Methodist Episcopal Church, for use as a community house for the benefit of negro Methodism. Dr. Quine was a deeply religious man, of intense and powerful personality, an exceptionally forceful didactic teacher, a greatly loved and genuine leader.

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State Society will pay no bills for legal services except those contracted by the Committee. Notify the Chairman at once. Do not employ attorneys.

Send original articles and all communications relating to advertisements to Dr. Charles J. Whalen, Editor, 6221 Kenmore Avenue, Chicago.

Membership correspondence to Dr. Wm. D. Chapman, Silvis, Ill.

Society proceedings and news items and changes in the mailing list to Dr. Henry G. Ohls, Managing Editor, 927 Lawrence Avenue, Chicago.

Contributors will submit all copy for publication typewritten on standard size paper and double spaced. Copy not complying with this rule will be returned, if convenient.

Subscription price of this Journal to persons not members of the Illinois State Medical Society is $3.00 per year, in advance, postage prepaid, for the United States, Cuba, Porto Rico, Philippine Islands, Hawaiian Islands and Mexico. $3.50 per year for all foreign countries included in the postal union. Canada, $3.25. Single current copies, 35 cents. Back numbers, after three months from date of publication, 50 cents.

Editorial

STATE DEPT. OF HEALTH DISTRICT HEALTH SUPERINTENDENTS OPPOSE STATE MEDICINE

Resolution of District Health Superintendents of the Illinois State Department of Public Health, including northern, central and southern Illinois groups unanimously adopted at their recent meetings.

Resolved: That District Health Superintendents favor the advertising campaign proposed by the Illinois State Medical Society and the assessment of ten dollars imposed on each member thereof for that purpose; endorse the Medical Practice Act to be submitted by Illinois Medical Society to the session of the legislature and also endorse the principles enunciated by the House of delegates of the American Medical Association at the 73rd session in St. Louis in May, 1922, reading as follows:

"The American Medical Association hereby declares its opposition to all forms of 'state medicine' because of the ultimate harm that would come thereby to the public weal through such form of medical practice.

'State medicine' is hereby defined for the purpose of the resolution to be any form of medical treatment provided, conducted, controlled or subsidized by the federal or any state government or municipality excepting such service as provided by the army, navy or public health service and that which is necessary for the control of communicable disease, the treatment of mental disease, the treatment of indigent sick, and such other service as may be approved by and administered under the direction of or by a local county medical society and are not disapproved by the state medical society, of which it is a component part."

The District Health Superintendents also wish to bring to the attention of the Illinois Medical

Society that all their activities are in accordance with the tenets set forth in the resolution as adopted by the A. M. A.

AN APOLOGY

In the Illinois Medical Journal, January, 1923, page 7, Section 3, in the article outlining the provisions of the new Medical Practice Act, there was an extra line injected which read as follows:

"Dees ees a helova lands."

The insertion of this line was deliberate and was put in by someone who desired to belittle and bring ridicule on any attempt to regulate the practice of medicine.

The obnoxious phrase was written in after final proof had been O. K.'d by a member of the State Legislative Committee. Its appearance in the Journal in connection with the article mentioned, has caused the editor much embarrassment and has created a need for a great deal of explaining. The Editor and Assistant Editor were powerless to prevent the insertion of words or phrases after the final proof was sent in.

The Journal is published by one of the most reliable firms in the West. On discovering the obnoxious language alluded to, the editor asked the publishers of the Journal to investigate and place the responsibility. In due course the chairman of the Board of Directors of the corporation expressed sincere regret for the occurrence and gave assurance that they had taken immediate and drastic action to prevent a repetition in any future issue of the Journal.

The Legislative Committee and the editor of the Journal are satisfied with the apology of the publishers and feel sure there will be no repetition of this unfortunate act.

ALL ARE INVITED TO ATTEND THE A. M. A. MEETING AT SAN FRANCISCO JUNE 25-29

California invites you to attend the American Medical Association Convention in San Francisco June 25 to June 29, 1923. You are also invited with your families and friends to attend the California State Medical Association Meeting Friday and Saturday before the American Medical Association holds its Convention in the same city. Some five or six other National and District Medical Associations will meet in San Francisco between June 21 and June 30.

Members of the Illinois Medical Association, in particular, are urged to attend the Convention and to spend their vacation in California. Through contacts with various financial, civic, tourist and automobile agencies, we are prepared upon request to assist you in planning your trip, in making you comfortable while at the Convention, in arranging side trips of any length or character, and in any other way acting as your host while in our state.

We are now making arrangements for a number of automobile caravans from eastern points to San Francisco. From early information it seems that this is going to be a popular method of crossing the continent. If you and your friends desire to come by automobile, communicate with us and we will assist you from the moment you leave home until you get back. If you plan to come in any other way, write to us and we will be glad to help you with your arrangements. You are requested to write to Dr. W. E. Musgrave, 806-9 Balboa Bldg., San Francisco, for any information of whatever character about this Convention, or about vacation opportunities anywhere in California.

ANNOUNCEMENT

The Seventh Annual Clinical Session of the American Congress on Internal Medicine will be held in the amphitheatres, wards and laboratories of the various institutions concerned with medical teaching, at Philadelphia, Pa., beginning Monday, April 2, 1923.

Practitioners and laboratory workers interested in the progress of scientific, clinical and research medicine are invited to take advantage of the opportunities afforded by this session.

Address inquiries to the Secretary-General.

Sydney R. Miller, President,
Baltimore, Md.

Frank Smithies, Sec'y-Gen'l,
1002 N. Dearborn St.,
Chicago, Ill.

AN ALTERNATIVE

An old lady describing the symptoms of her ailment to a noted but eccentric physician, said: "The trouble, doctor, is that I can neither lay nor set."

Whereupon the good old doctor answered her thus: "Then, madam, I would respectfully suggest the propriety of your roosting."—*Judge*.

WHY SOME STATES ACCEPT THE SHEPPARD-TOWNER MATERNITY ACT

Twelve states pay 95 per cent of the total tax.

Complete statistics of income for the calendar year 1920 made public Oct. 1, 1922, shows Illinois is third in list of incomes paid.

Of the total income tax New York paid 23.69 per cent; Pennsylvania, 12.13 per cent; Illinois, 8.68 per cent; Ohio, 6.76 per cent, and Massachusetts 5.82 per cent. These five states together paid 57.08 per cent of the combined personal and corporation tax of the country. These states, with seven others, Michigan, Indiana, Iowa, New Jersey, California, Missouri, and Maryland, twelve states in all, paid 95.83 per cent of the total tax.

THE PROPOSED NEW MEDICAL PRACTICE ACT

At present, Illinois may or may not have a law in relation to the practice of medicine. The law of 1917 was declared invalid, and the law of 1899 is now awaiting the decision of the supreme court as to its constitutionality.

The bill for a new Medical Practice act as prepared by the legislative committee of the State Medical Society has been introduced into the General Assembly to meet this condition of uncertainty.

It provides for two forms of license: 1, to practice medicine in all its branches, and 2, to treat human ailments without drugs or medicines and without operative surgery.

The old law also provided for two forms of licenses, but the limited license permitted its holder to call himself a Chiropractor, an Osteopath, a Naprapath, or most anything else, provided he did not hold himself out to the public as being licensed to practice medicine in all its branches. It is not unusual to find a person holding himself out to the public as being a number of kinds of healer or practitioner. This manner of deceiving the public is not prohibited by the present law.

Under the proposed law the applicant for a limited license must designate in his application the system or method of treatment that he has studied, and if he gets a license, he is limited by its terms to the form of treatment that he was examined in. Surely no one should be heard to complain at such a provision in a law. Just common honesty demands that one should proclaim himself only what he is.

The Christian Scientists asked for the following exemption: "nor shall any person treating human ailments without drugs or medicines and without operative surgery, by spiritual means or prayer be subject to the provisions or any of the provisions, sections, subdivisions, sentences, clauses or penalties of this act, but should this section, or any part of it be held invalid or unconstitutional, the entire act of which this section is a part shall become and be invalid and of no force nor effect."

The committee very fully safeguarded the rights of the Christian Scientists by utilizing the language of the constitution and inserted the following exemption: "or prohibit the treatment of human ailments by prayer as an exercise or enjoyment of religious profession or worship."

Every doctor of medicine and every other citizen of Illinois should read this bill with the aid of a lawyer, and get behind it and see that it becomes a law. There is nothing in the bill that any honest man should fear. Dishonest men are not much afraid of our present law.

The JOURNAL publishes the completed bill in this issue.

A BILL FOR

AN ACT to revise the law in relation to the practice of the treatment of human ailments for the better protection of the public health.

Section 1. Be it enacted by the People of the State of Illinois, represented in the General Assembly: This Act shall be known as the Medical Practice Act.

Section 2. No person shall practice medicine, or any of its branches, or midwifery, or any system or method of treating human ailments without the use of drugs or medicines and without operative surgery, without a valid, existing license so to do.

Section 3. No person, except as otherwise provided in this Act, shall hereafter receive such a license unless he shall pass an examination of his qualifications therefor by and satisfactorily to the Department of Registration and Education, hereinafter referred to as the Department.

Section 4. Each applicant for such examination shall:

1. Make application for examination on blank forms prepared and furnished by the Department;

2. Submit evidence under oath satisfactory to the Department that:

(a) He is twenty-one years of age or over;

(b) He is of good moral character;

(c) He has the preliminary and professional education required by this Act;

3. Designate specifically the name, location and kind of professional school, college or institution of which he is a graduate and the system or method of treatment under which he seeks, and will undertake, to practice.

4. Pay in advance to the Department fees as follows:

(a) For the examination to practice medicine in all of its branches, or to treat human ailments without the use of drugs or medicines and without operative surgery, or for any special or supplemental examination, ten dollars;

(b) For the examination to practice midwifery, five dollars.

Section 5. Minimum standards of professional education to be enforced by the Department in conducting examinations and issuing licenses shall be as follows:

1. For the practice of medicine in all of its branches:

(a) For an applicant who is a graduate of a medical college before the passage of this Act, that such medical college at the time of his graduation required as a prerequisite to graduation a four years' course of instruction in such medical college, or its equivalent, the time elapsing between the beginning of the first year and the ending of the fourth year having been not less than forty months, and which was reputable and in good standing in the judgment of the Department;

(b) For an applicant who is a graduate of a medical college after the passage of this Act, that such medical college at the time of his graduation required as a prerequisite to admission thereto a two years' course of instruction in a college of liberal arts, or its equivalent, or in such medical college, and at least a four years' course of instruction in the treatment of human ailments in such medical college, or its equivalent, the time elapsing between the beginning of the first year and the ending of the fourth year in such medical college having been not less than forty months, and, in addition thereto, a course of training of not less than twelve months in a hospital, such college of liberal arts, medical college and hospital having been reputable and in good standing in the judgment of the Department;

2. For the practice of any system or method of treating human ailments without the use of drugs or medicines and without operative surgery:

(a) For an applicant who is a graduate before the passage of this Act of a profcssional school, college or institution which taught the system or method of treating human ailments which he specifically designated in his application as the one which he would undertake to practice, that such school, college or institution at the time of his graduation required as a prerequisite to graduation a four years' course of instruction in such professional school, college or institution, or its equivalent, the time elapsing between the beginning of the first year and the ending of the fourth year having been not less than forty months, and which was reputable and in good standing in the judgment of the Department;

(b) For an applicant who is a graduate after the passage of this Act, but before July 1, 1925, of a professional school, college or institution which taught the system or method of treating human ailments which he specifically designated in his application as the one which he would undertake to practice, that such school, college or institution at the time of his graduation required as a prerequisite to admission thereto a four years' course of instruction in a high school, or its equivalent, or in such professional school, college or institution, and at least a four years' course of instruction in the treatment of human ailments in such professional school, college or institution, or its equivalent, the time elapsing between the beginning of the first year and the ending of the fourth year in such professional school, college or institution having been not less than forty months, such college of liberal arts and professional school, college or institution having been reputable and in good standing in the judgment of the Department;

(c) For an applicant who is a graduate on or after July 1, 1925, of a professional school, college or institution which taught the system or method of treating human ailments which he specifically designated in his application as the one which he would undertake to practice, that such school, college or institution at the time of his graduation required as a prerequisite to admission thereto a one year's course of instruction (a two years' course of instruction after 1928) in a college of liberal arts, or its equivalent, or in such professional school, college or institution, and at least a four years' course of instruction in the treatment of human ailments in such professional school, college or institution, or its equivalent, the time elapsing between the beginning of the first year and the ending of the fourth year in such professional school, college or institution, having been not less than forty months, such college of liberal arts and professional school, college or institution having been reputable and in good standing in the judgment of the Department;

3. For the practice of midwifery:

(a) That he has studied midwifery sufficiently in the judgment of the Department to have been able to become proficient therein.

Section 6. The course of instruction in high schools, or other schools, and colleges of liberal arts required by any medical college or professional school, college or institution, or required under any of the provisions of this Act, shall have been such as shall be satisfactory to the Department, and shall be evidenced with respect to any application in the manner required by the Department.

Section 7. All examinations provided for by this

Act shall be conducted under rules and regulations prescribed from time to time by the Department. Examinations shall be held not less frequently than four times every year, at times and places prescribed by the Department, of which applicants shall be notified by the Department in writing, and may be conducted wholly or in part in writing.

Section 8. Examination of applicants who seek to practice medicine in all of its branches shall embrace the subjects of which knowledge is generally required of candidates for the degree of doctor of medicine by reputable medical colleges in the United States, and shall be such in the judgment of the Department as will determine the qualifications of applicants to practice medicine in all of its branches.

Section 9. Examination of applicants who seek to practice any system or method of treating human ailments without the use of drugs or medicines and without operative surgery shall be the same as required of applicants who seek to practice medicine in all of its branches, excepting therefrom materia medica, therapeutics, surgery, obstetrics, and theory and practice, and shall be such in the judgment of the Department as will determine the qualifications of the applicant to practice the particular system or method of treating human ailments without the use of drugs or medicines and without operative surgery which he specifically designated in his application as the one which he would undertake to practice. If the applicant is a graduate of a professional school, college or institution in which obstetrics was taught to him as well, in the judgment of the Department, as such subject was taught at the same time in medical colleges in the United States reputable and in good standing in the judgment of the Department, he may, upon his request, be examined in obstetrics.

Section 10. Examination of applicants who seek to practice midwifery shall be such in the judgment of the Department as will determine the qualifications of applicants to practice midwifery.

Section 11. Every applicant successfully passing his examination shall be entitled to an appropriate license. The following kinds of licenses shall be issued:

1. To practice medicine in all of its branches, to applicants passing examinations therefor;

2. To treat human ailments without the use of drugs or medicines and without operative surgery, to applicants passing examinations therefor, the applicant under such a license to be specifically restricted by the terms thereof to the practice of the system or method which he specifically designated in his application as the one which he would undertake to practice, but such of these applicants as shall have successfully passed the examination in obstetrics under the requirements of Section 9 of this Act shall also be specifically licensed in the same instrument to practice obstetrics;

3. To practice midwifery.

Section 12. Any person licensed under the provisions of this Act to practice any system or method of treating human ailments without the use of drugs or medicines and without operative surgery shall be permitted to take the examination in materia medica, therapeutics, surgery and obstetrics, and shall receive a license to practice medicine in all of its branches if he shall successfully pass such examination, upon proof of having successfully completed in a medical college, or in any professional school, college or institution teaching any system or method of treating human ailments, reputable and in good standing in the judgment of the Department, courses of instruction in materia medica, therapeutics, surgery and obstetrics, deemed by the Department to be equal to the courses of instructions required in those subjects for admission to the examination for a license to practice medicine in all of its branches, together with proof of having completed (a) the two years' course of instruction in a college of liberal arts, or its equivalent, described in Section 5 of this Act, and (b) a course of training of not less than twelve months in a hospital reputable and in good standing in the judgment of the Department. But if such applicant for a license to practice medicine in all of its branches shall already have a license to practice obstetrics, he shall not be required to take an examination in that subject under the provisions of this Section.

Section 13. The Department may, in its discretion, issue a license without examination to any person who has been licensed to practice medicine, or to practice the treatment of human ailments according to any system or method, in any other State, Territory, Country, or Province, upon the following conditions:

1. That the applicant is of good moral character;

2. That if the applicant seeks to practice medicine in all of its branches

(a) He is a graduate of a medical college, reputable and in good standing at the date of his graduation in the judgment of the Department;

(b) The requirements for a license to practice medicine in all of its branches in the particular State, Territory, Country or Province in which he is licensed are deemed by the Department to have been substantially equivalent to the requirements for a license to practice medicine in all of its branches in force in this State at the date of his license;

3. That if the applicant seeks to treat human ailments without the use of drugs or medicines and without operative surgery

(a) He is a gradaute of a professional school, college or institution which taught the treatment of human ailments by the system or method which he specifically designated in his application as the one which he would undertake to practice, and which was reputable and in good standing at the date of his graduation in the judgment of the Department;

(b) The requirements for his license to practice the treatment of human ailments without the use of drugs or medicines and without operative surgery, according to the system or method which he specifically designated in his application as the

one which he would undertake to practice, are deemed by the Department to have been substantially equivalent to the requirements for a license to practice such system or method in force in this State at the date of his license;

4. That the State, Territory, Country or Province in which such applicant was licensed shall be then according a like privilege to persons so licensed under the authority of the laws of this State;

5. That the Department may in its discretion issue a license without examination to any graduate of a professional school, college or institution teaching the treatment of human ailments, reputable and in good standing in the judgment of the Department, who has passed an examination for admission to the medical corps of the United States Army, or that of the United States Navy, or that of the United States Public Health Service, or who has passed any other examination deemed by the Department to have been at least equal in all substantial respects to the examination required for admission to any such medical corps;

6. That applications for licenses without examination shall be filed with the Department under oath on blank forms prepared and furnished by the Department and shall set forth, and applicants therefor shall supply, such information respecting the life, education, professional practice and moral character of applicants as the Department may require to be filed for its use.

Section 14. Every person receiving a license under this Act shall pay to the Department the following fees:

1. For a license to practice medicine in all of its branches, or for a license to practice any system or method of treating human ailments without the use of drugs or medicines and without operative surgery, five dollars;

2. For a license to a person without examination, twenty-five dollars;

3. For a license to practice midwifery, three dollars.

Section 15. Every person holding a license under this Act, and every person holding a license or certificate under any prior Act in this State regulating the practice of medicine or the practice of the treatment of human ailments in any manner as a profession, shall have it recorded, if not already so recorded, in the office of the recorder of deeds in every county in which he regularly practices, and the recorder of deeds shall write or stamp thereon the date of such recording. Until such license or certificate shall be recorded the holder thereof shall not exercise any of the rights or privileges conferred therein. The recorder of deeds shall keep in a book provided for that purpose, and open to public inspection, a complete list of such licenses and certificates heretofore or hereafter recorded by him and his predecessors in office, including the date of the issue of each license or certificate, the name of the person therein, and the date of the recording thereof.

Section 16. The Department may revoke or suspend the license or certificate of any person issued under this Act, or issued under any other Act in this State, to practice medicine, or to practice the treatment of human ailments in any manner, or to practice midwifery, or may refuse to grant a license under this Act, and may cause any license so revoked or suspended to be marked canceled on the records of any recorder of deeds, upon any of the following grounds:

1. Procuring, or aiding or abetting in procuring, or attempting to procure, such an abortion as was made unlawful at the time under the provisions of the criminal code of this state;

2. Conviction of a felony, or commission of any act involving gross moral turpitude;

3. Gross malpractice resulting in permanent injury or death of a patient;

4. Obtaining a fee, either directly or indirectly, either in money or in the form of anything else of value, or in the form of a financial profit as personal compensation, or as compensation, charge, profit or gain for an employer or for any other person or persons, on the representation that a manifestly incurable condition of sickness, disease or injury of any person can be permanently cured;

5. Making a wilfully false or fraudulent representation for the purpose of obtaining practice in his profession, or for the purpose of obtaining money or anything else of value;

6. Habitual intemperance in the use of ardent spirits, narcotics or stimulants to such an extent as to incapacitate for performance of professional duties;

7. Holding one's self out to treat human ailments under any name other than his own, or the personation of any other physician;

8. Holding one's self out to treat or, in fact, wilfully treating, human ailments under any system or method of treatment other than that authorized by such license;

9. Having been declared insane by a court of competent jurisdiction and not thereafter having been lawfully declared sane;

10. Employment of fraud, deception or any unlawful means in applying for or securing a license or certificate to practice the treatment of human ailments in any manner, or to practice midwifery, or in passing an examination therefor, or wilful and fraudulent violation of the rules and regulations of the Department governing examinations;

11. Holding one's self out to treat human ailments by making false or grossly improbable statements, or by specifically designating any disease, or group of diseases, and making false claims of one's skill, or of the efficacy or value of one's medicine, treatment or remedy therefor;

12. Professional connection or association with, or lending one's name to, another for the illegal practice by another of the treatment of human ailments as a business, or professional connection or association with any person, firm or corporation

holding himself, themselves or itself out in any manner contrary to this Act;

13. Other unprofessional or dishonorable conduct.

Section 17. (a) No license or certificate shall be suspended, revoked or refused upon any of said grounds unless the holder thereof, or the applicant therefor, shall have been summoned to appear before the Department by a citation signed by the director, and unless the person so summoned shall have been given a hearing before the Department. No citation shall be issued except upon a sworn complaint, filed with the Department, setting forth the particular act or acts charged against the person to be cited. Upon the filing of such sworn complaint the director shall forthwith issue a citation containing a copy of it, and notifying such person of the time and place when and where a hearing of such charges shall be had, and commanding him to file his written answer thereto under oath within twenty days after the service on him of such citation, and notifying him that if he shall fail to file such answer default will be taken against him and his license or certificate may be suspended, revoked or refused, as the case may be. In case such person shall fail to file his answer, having received such citation, the license of such person may in the discretion of the Department be suspended, revoked or refused, as the case may be, without a hearing, if the act or acts charged in such citation shall constitute sufficient grounds for such action under this Act. Such citation and any notice in such proceedings thereafter may be served by registered mail. The hearing may be had at a date not less than thirty days after the issue of such citation. At the hearing such person shall be accorded ample opportunity to present to the Department in his defense, in person or by counsel, such statements, testimony, evidence and argument as he may desire to bring to its attention. The Department, at its expense, shall provide a stenographer to take down the testimony and preserve a record of all proceedings at the hearing, and the Department shall furnish a transcript of such testimony and proceedings to any person interested in such hearing upon payment therefor of five cents per one hundred words for the original and three cents per one hundred words for each copy thereof. The citation, answer and all other documents in the nature of pleadings filed in the proceeding, shall be the record thereof. Upon a showing of reasonable grounds the director may extend the time for filing such answer, may continue such hearing from time to time, and may, within thirty days after any order of suspension, revocation or refusal of any license, upon the written recommendation of the committee of physicians of the Department, set aside such order. The Department may at any time after such suspension or revocation of any license restore it to the person affected without examination, upon the written recommendation of such committee.

(b) In all cases where the Department suspends, revokes or refuses a license on the foregoing grounds, the circuit court of the county where such hearing shall be held, and the superior court of Cook County, if the hearing shall be held there, shall have power to review such suspension, revocation or refusal by writ of certiorari to the Department. Such writ shall be issued by the clerk of such court upon praecipe. Service upon the director, assistant director, or superintendent of the Department, shall be service on the Department, or service thereof may be had upon said Department by mailing notice of the commencement of the proceedings and the return day of the writ by registered mail to the office of the Department at least ten days before the return day of said writ. Such suit by writ of certiorari shall be commenced within twenty days of the receipt of the notice of the decision of the Department by the person whose license shall be so suspended, revoked or refused. In cases where such license has been suspended or revoked such court may, upon the filing of such suit by writ of certiorari, upon a hearing and proper showing of probable error in such action of the Department, suspend the operation of such suspension or revocation during the pendency of such suit. The department shall not be required to certify the record of its proceedings to such court unless the person commencing the proceedings shall pay to the Department the sum of 5 cents per 100 words of testimony taken before the Department and 3 cents per 100 words of all other matters contained in said record.

(c) Judgments and orders of such court under this section, upon the application of the Department or of the person who shall be affected, shall be reviewed only by the Supreme Court and only upon writ of error, which the Supreme Court, in its discretion, may order to issue only upon showing of probable error if applied for not later than the second day of the first term of the Supreme Court following the rendition of the judgment or order sought to be reviewed, but if the first day of said term is less than thirty days from the rendition of said judgment or order then application for said writ of error may be made not later than the second day of the second term following rendition thereof, but not otherwise. The writ of error so issued shall operate as a supersedeas.

Section 18. The Department shall have the power to administer oaths, subpoena and examine witnesses, and issue subpoenas duces tecum requiring the production of such books, papers, records and documents as may be evidence of any matter under inquiry before the Department, in the same manner as witnesses are subpoenaed in equity cases in the circuit court. The Department may, upon its own initiative, and shall upon the written request of any person cited to appear before it in accordance with the provisions of Section 16 of this Act, issue subpoenas for the attendance of such witnesses and the production of such books, papers, records and documents as it shall require in the transaction of its business, or shall be designated in such request, but the person applying for such

subpoenas shall advance the witness fees and fees for service of subpoenas provided for in suits pending in the circuit court. Service of such subpoenas shall be made by any sheriff or constable or other person in the same manner as in cases in such court. In case any person so served shall wilfully neglect or refuse to obey any such subpoena, or to testify, the director may at once file a petition in the circuit court of the county in which such hearing is to be heard, or has been attempted to be heard, or in the circuit or superior court in Cook County, setting forth the facts of such wilful refusal or neglect, and accompanying said petition with a copy of the citation, and the answer, if one has been filed, together with a copy of the subpoena and the return of service thereon, and may apply for an order of court requiring such person to attend and testify, or produce books and papers, before the Department, at a specific time and place. Any circuit court of the State or the superior court of Cook County, or any judge thereof, either in term time or vacation, upon such showing shall within proper judicial discretion order such person to appear and testify, or produce such books or papers, before the Department at a time and place to be fixed by the court or judge. If such person shall wilfully fail or refuse to obey such order of the court or judge, without lawful excuse, the court shall punish him by fine or by imprisonment in the county jail, or by both such fine and imprisonment, as the nature of the case may require and may be lawful in cases of contempt of court. Every witness attending before the Department at any hearing under this Act shall be entitled only to such compensation for his time and attendance and payment of traveling expenses as is or shall be allowed by law to witnesses attending such courts, which shall be paid by the person requiring, or by the Department if requiring on its own initiative, such testimony or evidence. The Department, upon its own motion, or upon application of any person interested in any such hearing, may issue a dedimus potestatem directed to any commissioner, notary public, justice of the peace, or to any other officer authorized by law to administer oaths, to take depositions of persons whose testimony may be deemed by the Department necessary in any such hearing. Such dedimus potestatem may issue to any part of Illinois, or to any other State, or any territory, of the United States, or to any foreign country. The Department shall have the power to adopt reasonable rules to govern the issue of a dedimus potestatem, the taking of such depositions and the payment of all expenses thereof.

Section 19. The Department shall have power and it shall be its duty

1. To make rules for establishing reasonable minimum standards of educational requirements to be observed by medical colleges, or by any professional school, college, or institution teaching any system or method of treating human ailments, or by colleges of midwifery, and to determine the reputability and good standing of all schools, colleges, and institutions now, heretofore, or hereafter existing.

2. To require satisfactory proof whether any medical college, or professional school, college or institution teaching any system or method of treating human ailments, or any college of midwifery, enforced at any particular time in the past the standard of preliminary education requisite to admission thereto.

3. To determine the standard of literary or scientific colleges, high schools, seminaries, normal schools, preparatory schools, graded schools, and the like, in the discharge of its duties.

Section 20. The provisions of this Act shall not be so construed as to discriminate against any system or method of treating human ailments, or against any medical college, or any professional school, college or institution teaching any system or method of treating human ailments, on account of any such system or method which may be taught or emphasized in such medical college, or in such professional school, college or institution.

Section 21. Nothing in this Act shall be construed to prohibit any person from using any antiseptic prescribed by the Department of Public Health of the State for the prevention of the spread of communicable diseases, nor from using antidotes, or rendering any other service, in any case of emergency if without charge or compensation.

Section 22. All licenses and certificates heretofore legally issued by authority of law in this State permitting the holder thereof to practice medicine, or to treat human ailments in any other manner, or to practice midwifery, and valid and in full force and effect on the taking effect of this Act, shall have the same force and effect, and be subject to the same authority of the Department to revoke or suspend them, as licenses issued under this Act.

Section 23. If any section, subdivision, sentence or clause of this Act shall be held to be invalid or unconstitutional, such decision shall not affect the remaining parts of this Act.

Section 24. If any person shall hold himself out to the public as being engaged in the diagnosis or treatment of ailments of human beings; or shall suggest, recommend or prescribe any form of treatment for the palliation, relief or cure of any physical or mental ailment of any person with the intention of receiving therefor, either directly or indirectly, any fee, gift, or compensation whatsoever; or shall diagnosticate or attempt to diagnosticate, operate upon, profess to heal, prescribe for, or otherwise treat any ailment, or supposed ailment, of another; or shall maintain an office for examination or treatment of persons afflicted, or alleged or supposed to be afflicted, by any ailment; or shall attach the title Doctor, Physician, Surgeon, M. D., or any other word or abbreviation to his name, indicative that he is engaged in the treatment of human ailments as a business; and shall not then possess in full force and virtue a valid license issued by the authority of this State to practice the treatment of human ailments in any

manner, he shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than one hundred dollars nor more than five hundred dollars, or by confinement in the county jail not more than one year, or by both such fine and imprisonment, in the discretion of the court.

Section 25. Any persons who shall practice medicine in any of its branches, or shall treat human ailments by any system or method, or shall practice midwifery, without a valid existing license under the laws of this State so to do, shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than one hundred dollars nor more than five hundred dollars, or by confinement in the county jail not more than one year, or by both such fine and imprisonment, in the discretion of the court.

Section 26. Any person who shall treat human ailments by the use of drugs, or medicines, or operative surgery (except any drug or medicine required by law to be used in midwifery, when such person is entitled to practice midwifery) and shall have only a license to treat human ailments without the use of drugs or medicines and without operative surgery, shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than one hundred dollars nor more than five hundred dollars, or by confinement in the county jail not more than one year, or by both such fine and imprisonment, in the discretion of the court.

Section 27. Any person who shall treat human ailments in any manner not constituting midwifery, and shall have only a license to practice midwifery, shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than one hundred dollars nor more than five hundred dollars, or by confinement in the county jail not more than one year, or by both such fine and imprisonment, in the discretion of the court.

Section 28. Any person, not being licensed in this State to practice medicine in all of its branches, who shall hold himself out by any sign or advertisement, or by a writing of any kind, to treat human ailments without therein attaching to his name a word or words indicating the system, method or kind of practice which he is lawfully licensed to pursue in this State, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than one hundred dollars nor more than five hundred dollars, or by confinement in the county jail not more than one year, or by both such fine and imprisonment, in the discretion of the court.

Section 29. Any person, not being licensed in this State to practice medicine in all of its branches, or not being licensed in this State specifically to practice midwifery either separately or in connection with the treatment of human ailments without the use of drugs or medicines and without operative surgery, who shall practice midwifery, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than one hundred dollars nor more than five hundred dollars, or by confinement in the county jail not more than one year, or by both such fine and imprisonment, in the discretion of the court.

Section 30. Any person who shall obtain a fee, either directly or indirectly, either in money or in the form of anything else of value, or in the form of a financial profit either as personal compensation or as compensation, charge, profit, or gain for an employer, or any other person or persons, on the representation that he can permanently cure a manifestly incurable condition of sickness, disease or injury of any person, shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than one hundred dollars nor more than five hundred dollars, or by confinement in the county jail not more than one year, or by both such fine and imprisonment, in the discretion of the court.

Section 31. Any person who shall hold himself out to treat human ailments under any name other than his own, or by the personation of any physician, shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than one hundred dollars nor more than five hundred dollars, or by confinement in the county jail not more than one year, or by both such fine and imprisonment, in the discretion of the court.

Section 32. Any person who shall hold himself out to treat human ailments by any system or method of treatment other than that for which he holds a valid, existing license under the laws of this State, shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than one hundred dollars nor more than five hundred dollars, or by confinement in the county jail not more than one year, or by both such fine and imprisonment, in the discretion of the court.

Section 33. Any person who shall employ fraud or deception in applying for or securing a license under this Act, or in passing any examination therefor, shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than one hundred dollars nor more than five hundred dollars, or by confinement in the county jail not more than one year, or by both such fine and imprisonment, in the discretion of the court.

Section 34. Any person who shall in connection with any application or examination before the Department file, or attempt to file, with the Department as his own, the diploma, license or certificate of another, shall be guilty of a felony and shall be punished therefor as the law shall prescribe at the time for forgery.

Section 35. Any person who shall wilfully swear or affirm falsely, or make or file any affidavit wilfully and corruptly, in filing or prosecuting his application for a license before the Department, or in submitting any complaint, evidence or testimony to the Department under the provisions of this Act, or under any rule or regulation of the Department,

shall be guilty of a felony and shall be punished therefor as the law shall prescribe at the time for perjury.

Section 36. All such fines shall inure to the benefit of the Department.

Section 37. This Act shall not prohibit dentists, pharmacists, optometrists, or other persons, from lawfully carrying on their particular profession or business under any valid, existing Act of this State regulatory thereof, nor prohibit gratuitous services in cases of emergency, nor prohibit the treatment of human ailments by prayer or spiritual means as an exercise or enjoyment of religious profession or worship.

Section 38. The following Acts are hereby repealed: "An Act to regulate the practice of medicine in the State of Illinois and to repeal an Act therein named," approved April 24, 1899, and "An Act to revise the law relative to the practice of the art of treating human ailments," approved June 25, 1917; and all Acts and parts of Acts in conflict or inconsistent herewith are hereby repealed.

Section 39. Whereas an emergency exists, therefore this Act shall be in force and effect from and after its passage and approval.

WE ARE DOING THE BEST WE CAN

The Lay publicity committee of the Illinois State Medical Society, in its campaign for subscriptions, receive many letters demanding that the committee attempt to correct the 57 varieties of menacing conditions confronting the profession throughout the state. The Editor in his official capacity receives an unlimited number of letters demanding that he and the organization do something to protect the medical profession from the evils confronting it. The Editor realizes his many limitations and with the other officers of the society is doing the best he can to safeguard the interests of the doctors of the state.

We quite agree that there is much to fear in the future from menacing legislation and from an apathy on the part of the officials to enforce the laws now on the statute books.

The solution of the problem lies entirely with the rank and file and it is to this source that we must look for action in the time of danger. Physicians can control the situation by their ballots and other activities, if properly directed, if they desire to do so. Apparently, they do not care to do so, and therein lies the whole difficulty. Physicians are so lacking in political foresight that they misuse the vote shamelessly. How else can we explain the present and past experience of a Congress that is so cowardly and platitudinous that it is a by-word among the people of America? These people are in official positions because of the apathy of the physicians of their respective states. It is high time that the doctors of the country are awakened to a realization that they have civic as well as professional duties to perform.

THE LAY PUBLICITY EDUCATIONAL CAMPAIGN OF THE STATE SOCIETY

Every member of the Illinois State Medical Society is being solicited for a contribution to the fund for carrying on a lay-educational campaign through the newspapers of the state.

It is time the public is made familiar with what the science of medicine has done in the saving of human life; also made familiar with the dangers of quackery and charlatanism.

Through glaring spectacular statements, and bought and paid for space in newspapers and periodicals, the Charlatans have distorted medical facts and are menacing the health welfare of the people, by playing on the credulity of the unsophisticated.

So brisk is trade in the cults, that even blacksmiths, carpenters, plumbers and dressmakers are being recruited to take easy courses of from three to six months duration and hang out shingles as healers.

At the last meeting of the Illinois State Medical Society, it was voted to fight the "quacks" with their own medicine. The Council of the Society at its September meeting appointed a committee to devise ways and means to educate the public to the dangers of medical practice by the untrained and uneducated. The Committee was instructed to prepare and supervise data to be printed in the daily newspapers and periodicals that will open the eyes of the public as to the progress of medical science, what medicine has done and is doing for humanity, which is intended to specifically impress upon the people at large, that a sick man needs a doctor and not a mountebank. Articles for the lay press will be handled by a reliable organization, familiar with the best methods of securing results from publicity propaganda.

Educational data will be placed before the public largely through the lay press, assisted by lectures, pamphlets, etc. The subject-matter for the press, pamphlets, and the themes for the addresses to be made in public places, will be educative, elucidative and general. Exploitation of

individuals or paternalistic theories will be disbarred. This campaign will be along lines showing the virtues of the real in contrast to the dangers of the bogus. It will open the eyes of the men who are too ignorant to distinguish medical skill from "buncum" and clear away the fogs from those who should know better, but who do not,—turned in the wrong direction, perhaps, by some careless physician who is prone to despise the "day of small things," and laughed away the seeming trivial pain that a patient complained of because only appendectomy or a cancer of one of the great organs was of moment enough for consideration.

The United States Government has found it expedient to advertise government securities in this day of get-rich schemes. Purveyors of natural resources, such as leather, wool, butter and eggs, are advertising daily the difference of their products over the synthetic wares flooding the markets.

Medicine must retain its traditional dignity, but when the health welfare of the people is jeopardized, she must arise and expose the invaders.

The proposed campaign cannot be prosecuted without funds; it must be supported by popular subscription. It is hoped that every doctor will subscribe to this worthy cause. Serious disease diverted from the incompetent will result in the saving of thousands of lives and will prevent much permanent invalidism.

This campaign will achieve two great objectives: A gradual, but ultimate restoration of the medical profession to its merited place in the public sympathy and confidence and the inestimable benefits to humanity through the consequent prevention of disease and the preservation of life.

For the convenience of those who have mislaid their letter of Appeal from the State Society, we hereby reproduce the pledge card:

Please sign and mail to the Illinois State Medical Society.

To the Officers of the Illinois State Medical Society and Members of the Council.

"I am in accord with the proposed newspaper educational campaign in the press of Illinois, unanimously adopted by the House of Delegates of the State Society at the 1922 meeting and the plan recommended by the Council of the Society, and as evidence of my desire to co-operate with the Officers of the Council and of the State Society, I hereby enclose my check for $..... to aid in defraying the expenses thereof:

MAKE CHECKS PAYABLE TO THE ILLINOIS STATE MEDICAL SOCIETY.

Name.....M. D.
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Sign the above pledge card, make out a check payable to the Illinois State Medical Society and mail both in an envelope addressed as follows:

From
.....
.....
.....

ILLINOIS STATE MEDICAL SOCIETY,
c|o Cashier, Sheridan Trust & Savings Bank,
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Note.—Rock Island County Medical Society contributed $100 to the fund. Rock Island County Society is the only county organization that contributed to the fund up to the time of going to press with this issue.

25 E. Washington St.,
Chicago, Ill.

LAY PUBLICITY COMMITTEE,

MEDICAL EDUCATION SUBSIDY

John B. Deaver delivered an address on this subject before the American College of Surgeons, which is published in *Surgery, Gynecology and Obstetrics*. Said Dr. Deaver:

"We who are doing the world's work must see to it that our influence in this respect is not usurped by those who sit at their desks and think out specious arguments, fortified by vast financial power placed at their disposal by well-meaning men who are not themselves qualified to judge in this sphere, but must be guided by advisers who are not always infallible. I am thinking of the recent furore in favor of the full-time teacher in clinical branches. I am musing over the creation of great clinicians overnight by the feat of powerful influence. I am impressed by the rapid metamorphosis of the fledgling, nurtured, shielded, not to say mentally confined within the limits of sympathetic institutions and departments. I am not questioning the motives of the originator of this audacious movement but I am concerned for the students, and would be alarmed for the profession were it not for my great confidence in the sober sense of that great body of a democracy such as this, which will eventually work its way towards its own proper method of dealing safely and sanely with conditions. Still I marvel at that new super-intelligence, which in rapid pursuit of its ideal, sets aside the principle of natural selection, the well-proved motive of human endeavor (high reward) and the cardinal virtue for the attainment of practical results—experience. In my heart I am thankful that such men had no voice in the selection of a generalissimo for the allied armies, and I note with curious reflection that the vast resources upon which the idea floats were not obtained and are not conserved by similar fancies.

"During the last five years, as you know, the tendency has been toward the full-time clinical teacher. Its central idea was good, but its application, begun before the war, if I mistake not, was influenced by the German idea of efficiency, which, as you all know, failed utterly to include the human element in its equation. Without wishing to appear reactionary, but with the interest of the profession in mind, I do not hesitate to say that I doubt the wisdom of the present course. It is an extreme, and the pendulum must soon swing in the opposite direction. The professor of clinical branches should not only be allowed, he should be obliged, to be in direct professional contact with the public. The science and art of surgery are one and inseparable. There can be no art that is not based on science, and there is no science without its practical application. Of the chaste union of the two shall spring the fruit of the tree of life for the untold millions, born and unborn, whose lives and whose happiness shall depend upon sane surgical science and safe surgical skill. Science has been kept sane only by constant contact with observed and demonstrable facts, like the giant who renewed his strength by contact with mother earth. Practice is kept sane and free from danger of the rule of thumb only by a constant infusion of science. The problem of today is to avoid conflict between these essential elements of a real union, to provide for their proper function, to inculcate into the minds of the young the true conception of their relations and responsibilities, and to deliver to society the greatest good to the greatest number. The last consideration is the most momentous one, for it means results, and it is by results that we shall justly be judged.

"We must deplore, therefore, anything which detracts from that high standard of service to the community which the community has a right to demand, in view of the extraordinary freedom and power which it has conferred upon us. It is our profound belief that the system of full-time salaried chairs for the clinical branches which has been forced upon a number of our foremost institutions by powerful influences is not only contrary to the spirit of American institutions, and contrary to the proper workings of the human mind, but that it is sure to result in degeneration of that art which is the true power of science, and in the deterioration

of the instruction to the student in how to deal effectively with the problems which he must confront in his chosen life work. To me the plan smells of the midnight oil of the theorist (to say nothing of the oil which has lubricated the ways for its launching). It has in it none of the red blood of the real administrator working to get results with humanity as God made humanity. In its application as I have witnessed it the plan shows no appreciation of the fact that the head of a clinical chair must be a clinician. Is not the clinical art also a science? Does it not rest upon knowledge and does it not depend upon aptitude, ability, experience and hard work? Can anyone become a clinician by merely calling himself by that name? Does appointment to a professional chair make him a teacher? Or is it no longer true that in addition to knowledge, which is not so common a possession, the successful department head must have qualities of personal integrity, stimulating personality, and administrative ability?

"In attempting to remedy the evil of the clinical professor overloaded with private practice and neglecting his teaching, his department, and his scientific work, these men of admirable intentions have gone to an equally unjust extreme. Orderly evolution was going on, even rapidly, if one considers world movements; but it apparently was not rapid enough for those who seek to reach the heights in a bound. But this is the day when the professor may try his theories on the whole human race, and the Pied Piper of Hamelin has his counterpart in Russia and would-be imitators everywhere.

"If I mistake not, there are signs of returning sanity. The domination of those who have shown their inadequate grasp of the whole problem is being loosened. Let us hope that the education of our youth will be entrusted to men who are outstanding figures in the field, which they are presenting to the impressionable mind. Let us all fully realize that science is the beginning of practice, and that practice is the goal of science."

FEDERAL AID CONDEMNED BY FRANK O. LOWDEN, FORMER GOVERNOR OF ILLINOIS.

Ex-Governor Lowden in the October, 1922, issue of *The Woman's City Club Bulletin* says:

The framers of the constitution recognized the imperfections of democracy and sought to guard against them in the instrument they framed. They proceeded upon the theory that full sovereign power resided in the people. But they did not confer all that power upon the government. There were some rights so precious that they would not intrust them even to a government of their own creation, such as the right of freedom of religious worship and freedom of speech. They guarded the life and the liberty and the property of the individual and placed them forever, as they hoped, beyond the whim or malice of a majority, no matter how large. They knew that the tyranny of a majority was no less intolerable than the tyranny of a king. Complete sovereign power today abides, not in any government, either federal or state, or in all governments combined, but is found in its fullness only in the people of the United States. This is the real significance of a written constitution such as ours. The lesson of history is that no individual, as a king in a kingdom, and no selected group, as in an aristocracy, and no majority, as in a democracy, can be trusted with supreme power. The outstanding merit, therefore, of our constitution is that the people so far have refused to divest themselves of their own inherent sovereign power over the fundamental rights of the individual.

Among the subjects upon which our federal and our state constitutions have imposed limitations upon the government they created is the subject of taxation. These constitutional limitations have been of immense value. And yet taxation is increasing much more rapidly than wealth itself.

The real friend of popular government is not he who constantly tells the people that they can do no wrong, but he who warns them against dangers of their own creation. If democracy is failing in any respect, let us point it out. In that way only shall we be able to correct it. History teaches us that one of the most fruitful causes of the downfall of nations has been increasing cost of government until it became too great to be borne by the people. The advocates of the democratic form for a long time believed that this was less likely to be true in a democracy than in other forms of government. It was thought that, where the people governed, they would see to it that the expenses of government which they themselves must bear, were kept well within the ability of the people to pay. Does experience justify these hopes? James Bryce published a great work called "Modern Democracies." That work is an accurate, exhaustive study of the democracies of the world. Its author all his life was a distinguished champion of the democratic principle in government. A more sympathetic critic hardly could be found. The one thing he concluded in which democracy is most disappointing to its friends is in the waste and extravagance which seem generally to attend democratic government. This thought is found running all through the two volumes of his work. Among other things, he says:

> "So far from securing economy, as John Bright and the English Radicals of his time fondly expected, democracy has proved a more costly though less incompetent form of government than was the autocracy of Louis XV in France or that of the Czars in Russia."

One prolific cause of rapidly increasing cost of government is to be found in the number of public agencies that have authority to levy taxes. There is the federal government; there is the state government; there is the local, municipal government. In many states there is the school board. All of these have the power independently of one another to impos- taxes. In addition, where the bonding power has been reached by the municipality, there has been a

growing tendency to create a new district for some new purposes covering the same territory already occupied by other municipalities. And then in many states, besides all these, there are so-called improvement districts. The taxes levied by any one may seem insignificant, but when all taxes are totaled they already dangerously approach confiscation in many cases. Nor is the line of demarcation between these several jurisdictions clearly observed. More and more the government appropriates for purposes which properly belong to the state. The state is urged all the while to appropriate for objects for which the local communities themselves should care. This results in endless duplication in cost of administration and consequent extravagance

What has come to be known as "pork barrel" legislation is generally condemned. However, wherever it is proposed to expend public money upon any object whatsoever in any community, we find the people of that community as a whole back of the project. Representatives and senators in Congress are held responsible for "pork barrel" legislation. The fact is that severally they are yielding only to the importunities of their own constituents. Everybody is against all "pork barrel" legislation except that in favor of his own community. In fact, the people of a congressional district or a legislative district frequently by re-election reward their member for securing an appropriation for their district, while condemning "pork barrel" legislation as a whole. Since, however, they have no influence in the election of members beyond their own district, this general condemnation is of no avail.

The people seem to act on the theory that it is always laudable to get whatever money they can from the public treasury for their own community. They seem to feel that this costs them nothing. They will ask for an armory, for a post office building, or improvement of a creek which one time contained water enough to bear an Indian canoe, with all the earnestness in the world. At the same time they would not think of voting taxes upon themselves to defray the cost of the project. They forget that while they are doing this, other communities all over the state, or all over the nation, as the case may be, are doing precisely the same thing. So the cost in the end to them is just as great as though they had voted the taxes upon themselves for the improvement.

The farther removed the particular public treasury be, the more the people appear to believe they are getting something for nothing when they seek an appropriation. It follows that the local municipality should be required to provide its own revenues for its own needs and should not be given aid by the state. Likewise, the state should be compelled to provide its own funds for purely state needs. Lastly, the federal government should appropriate only for those interests which are purely of national concern and clearly within the purposes for which the federal union was established. No more expensive phrases have been invented in recent years than "state aid" and "federal aid."

During the war, the federal government engaged in all sorts of activities which theretofore has been carried on by the states. This perhaps was inevitable. The bureaus in Washington then tasted the delights of power over fields which before had been exclusively occupied by the states. They were loath to give up this power. Propaganda, that new-found weapon of all causes, good and bad, was employed to perpetuate these now powers. Federal aid was the potent phrase with which they conjured. They sought to break down the opposition which naturally existed among state officials to encroachment upon their own proper fields of activity. They found the most effective weapon at their hands was the offer of federal aid. Federal aid, generally speaking, is a bribe offered to state governments to surrender their own proper functions. There is scarce a domain in the field of government properly belonging to the municipality or the state which the federal government is not seeking to invade by the use of the specious phrase "federal aid." Education, public health, private employment are a few instances which readily come to mind. The bureaucrats who initiate these movements for an extension of their own power draw great strength from the class specially affected. This rapid extension of federal administration not only means greatly increased expenses because of duplication of efforts, but it means the gradual breaking down of local self-government in America. For the bureaucrat at Washington assumes to control not only his own administration in that field but that of the state as well. There was not a department of state government in Springfield even during the war that did not protest that if the government would withhold its hands it could better and more efficiently administer its affairs without this governmental aid and interference.

And whatever tends to atrophy local self-government weakens the republic. I quote from Bryce in "Modern Democracies":

> "Democracy needs local self-government as its foundation. That is the school in which the citizen acquires the habit of independent action, learns what is his duty to the state, and learns also how to discharge it."

The employes of the city or the state or the nation all the while become a more important factor in increasing the cost of government. Where numerous, they now are generally organized in the several branches of the public service. Whatever the nominal purpose of the organization, their keenest activities are directed toward an increase in pay. These organizations have come to be so powerful that they exercise a very great influence upon legislatives bodies. The different organizations are usually found co-operating closely when the question is an increase of salary for members of any one of them. Though a large majority of our people still earn their own livelihood in private pursuits, the minority which derives its sustenance from the public treasury has become large enough, thoroughly as that minority is organized, to frighten city councils, state legislatures, and even Congress into complying with their demands. It is unfortunate that nearly always those who seek

for any purpose to get money out of the public treasury are thoroughly organized. The taxpayer as such never are. It thus happens that the militant minority is often more powerful than the unorganized and perplexed majority. This fact in itself is the strongest argument of which I know against extending governmental activities beyond absolute need. It generally is better to put up with all the imperfections in private operation of any agency or industry than to increase the number of public employes. I tremble when I think of the consequences if the number of public employes shall be greatly increased. I recall an instance which illustrates the point. Several years ago I was a member of Congress. For part of the time while there I served as a member of the House Committee on Postoffices. After exhaustive hearings, and with much care, the postoffice appropriation bill was framed. The bill had the unanimous support of all members of the Committee, whether Republicans or Democrats. It was necessarily voluminous as it covered a great number of subjects. When it was submitted to the House and read paragraph by paragraph, though of course it met frequent objections, it was sustained by an overwhelming vote upon every proposition but one. In the preparation of the bill, the salaries of the different classes of employes had received much consideration and the Committee unanimously believed that it had done the right and equitable thing. One numerous class of postoffice employes, however, had not been accorded the increase it demanded. When this provision was reached, a member was found to move a very considerable increase in the salary of that particular class. This motion swept the House. The amendment was voted, not because the men who favored it had any less confidence in the Committee's action in fixing this particular salary than they had in the action of the Committee with reference to other provisions of the bill. In this particular case, however, the members were afraid of the organized opposition of this class of employes, scattered as they were throughout the districts of most of the members of the House.

Let the proportion of public employes continue to increase as rapidly as they have in late years and we will within a reasonable time witness this phenomenon: Our population divided into two classes, those holding public office, still a minority it is true, and all others working to support the minority in office. From that condition to the soviet form of government it is but a single step.

SOME RELIEF FROM THE FORMER NARCOTIC RESTRICTIONS

A few weeks ago Secretary Mellon of the treasury department approved Treasury Decision 3426, which rescinds that portion of Article 119 of Regulations 35 requiring the druggist who fills a narcotic prescription to show on the back of the prescription the signature and address of the person to whom such prescription or narcotic preparation was delivered.

This treasury decision also modifies Article 148 of Regulations 35, relating to the recording of names of those to whom exempt narcotic preparations are sold by substituting "name" in place of "signature." In other words, the druggist who dispenses an exempt narcotic preparation may now write the name of the party to whom it is delivered in his record book instead of requiring the purchaser to sign his or her name on the registry. This removes a source of considerable embarrassment where such sales are made to well known customers. Of course, if the purchaser of an exempt narcotic preparation is not personally known to the druggist he must then ask the name in order to make record of it himself.

The ruling further amends Article 117 of Regulations 35 by permitting physicians who prescribe narcotics for incurable diseases or for aged and infirm patients to so indicate by endorsing on the prescription "dispensed in treatment of incurable disease" or "patient aged and infirm (giving age) and drug necessary to sustain life." Or, as an alternative, the physician may hereafter simply endorse on the prescription, "exception 1, Article 117," in the first instance, or "exception 2, Article 117," in the latter.

Thus both pharmacy and medicine are afforded a measure of relief from an annoying and useless requirement by the issuance of T. D. 3426.

NAVY ADOPTS NEOARSPHENAMINE

The following letter of Rear Admiral E. R. Stitt, Medical Corps, United States Navy, was approved on August 17, 1922, by the Bureau of Medicine and Surgery, in charge of Rear Admiral W. C. Braisted, Washington, D. C., and published for the information of the medical officers of the United States Naval Service, in the U. S. Naval Medical Bulletin, October, 1922:

"July 7, 1920.

"To the Bureau of Medicine and Surgery:

"Subject: Recommendation that neoarsphenamine be substituted for arsphenamine in connection with use on board ships and at certain stations of the Navy.

"1. I would recommend that the use of arsphenamine be discontinued on board ships of the Navy and in its place be substituted neoarsphenamine. This same recommendation would apply to stations and smaller hospitals.

"2. In the larger hospitals where facilities for the administration of arsphenamine are satisfactory, the choice between arsphenamine and neoarsphenamine should be left to the discretion of the commanding officer.

"3. This recommendation is made for the following reasons:

"(a) In discussing fully this matter with the director of the hygienic laboratory he is of the opinion that most of the accidents attending the use of arsphenamine have been connected with errors in technic. In view of the simplicity of technic when using neoarsphenamine, many untoward results would be eliminated.

"(b) In the clinic of the Brady Institute, neoarsphenamine is used exclusively, and Doctor Young

and his associates are unable to note any lessened therapeutic efficiency with this drug than when arsphenamine is used."

EVERY MAN AND WOMAN WHO REFUSES VENEREAL EXAMINATION SHALL BE QUARANTINED

Every One Exposed to Venereal Disease May Be Held for Thirty Days, and So On

More Medical Prussianism

Last month we called attention to the growing menace of bureaucracy in this country, and the extensive parts so unhappily played by the medical politicians in its insidious spread. Since we penned that editorial, a flagrant instance has come to our notice. The Illinois State Board of Health has promulgated a set of rules and regulations, avowedly intended to restrict the dissemination of venereal diseases, embodying the most arbitrary and despotic interference with individual liberty of conduct which we have yet seen attempted by bureaucratic ukase—and that is saying a good deal. Time and space will not permit a detailed analysis and criticism of this interesting piece of sovietism in a supposedly democratic country; nor is it necessary to our purpose. As an example of its general character we may cite its requirements that the druggist shall report to the State Board every sale of a drug ordinarily employed for the treatment of a venereal disease, unless upon a physician's prescription. Other clauses in the edict are of a similarly meddlesome nature. It is to be understood that, in virtue of their promulgation by the State Board of Health, these regulations have all the force and effect of law, and are subject to criminal penalties.

Now, syphilis and gonorrhea and other venereal diseases are very serious affairs. No one, least of all a representative of medical science and practice, has the least desire of disputing that. And every right-thinking citizen is heartily in favor of all reasonable public measures for limiting their ravages and preventing their spread, even to the extent of imposing a certain degree of inconvenience and sacrifice upon individual citizens who are unfortunate enough to suffer from such diseases, or to be concerned in their consequences. So are many other social conditions that we can think of serious evils. But that venereal diseases, or any of those other evils, constitute such an emergency as to call for a practical suspension of the bill of rights is a proposition to which only the most fanatical reformer, blind to everything except his own fatuous obsession, will subscribe. The remedy is worse than the disease.

There, in fact, lies the root of the mischief in all this paternalistic, bureaucratic legislation and regulation. Certain evils bulk large in the vision and thought of a certain class of self-constituted reformers. They are ready to trample under foot all legal safeguards and individual rights which democracy has bought at the cost of blood and struggle through years of evolution and revolution, to bring about the correction of these incidental evils. At the time, the evils that they are attacking bulk larger in the public mind—because they are more obvious—than the abuses which are invoked to correct them. And thus these abuses are allowed to insinuate themselves into the State, and to grow to proportions which at last subvert the whole foundation of democratic government.

Thus, in this particular instance, we are confronted with the horror and danger of venereal disease. So overwhelmingly do they obsess the profession and the public at the present moment that in writing as we do we actually risk the accusation from those obsessed of being in favor of syphilis and gonorrhea. There is a loud demand for their supression and abolishment. The public endorses the demand, and a commission, with State authority, but without any direct legislative authorization, decrees that every man and woman who refuses examination shall be quarantined and his or her house placarded, that any person who has been exposed to venereal disease may be held for thirty days, and so on. Thus there is vested in the health board the power to wreck domestic happiness, social standing or business position, without any normal process of law—to set aside, in fact, as we have said, the bill of rights, under the protest that it is to correct one evil in the social system.

It is a most dangerous tendency of our present-day life, this tendency to resort to bureaucratic rule, or even to legislation, for the cure of every ill; and, we are bound to repeat, the medical profession is particularly prone to it. As an example of the lengths to which it is carried, we have this very day run across an article in a current medical journal by a physician whose pet obsession is that everybody ought to adopt a certain posture when they evacuate their bowels, and in the course of his paper this man seriously proposes that "There should be a law on the statute books of the government requiring and enforcing the installation of toilets that are low enough and of a design to permit the natural or primitive posture at stool." He really believes it too—and will get it enacted into law if he can. It would be laughable if it were not so serious.

The time is coming, of course, when there will be a popular revulsion against all this paternalism and bureaucracy. When that time arrives, the medical profession, which, through its politicians, has been loading the public with these irksome burdens, will be held in execration, unless it first breaks its own bands asunder, and frees itself from the machinations of its political betrayers.—*Medical Brief*, January, 1923.

POWER AS TO QUARANTINING SYPHILITIC PROSTITUTES

(Duncan v. City of Lexington et al. (Ky.) 244 S. W. R. 60)

The Court of Appeals of Kentucky, in affirming a judgment in favor of the defendants, says that the plaintiff asked for a writ of prohibition against the

city, its health board and various health officers, to prevent the enforcement against her of a city ordinance providing for the quarantining of persons having syphilis. She asked also for a mandatory injunction ordering her release from quarantine. In the absence of proof, and under the pleadings, it must be taken as true that she was arrested on a warrant issued by the health officer on reasonable grounds for believing that she had syphilis, and was being detained, after an examination voluntarily submitted to which proved her infection, in the hospital quarters of the city jail with others of her own sex similarly affected; that in these quarters she was completely separated and removed from those confined in the jail under charge or conviction of crime; that the quarters were regularly designated as a quarantine area for such purpose, were properly equipped therefor, and in charge of competent physicians and nurses; and that she was detained therein in quarantine and for treatment only, and would be released as soon as the disease yielded to treatment and ceased to be communicable and a menace to the public health.

The principal, if not the sole, questions for decision were whether or not the city had the power to pass an ordinance providing for the arrest and detention in quarantine, in a properly equipped, managed and designated hospital, of known prostitutes afflicted with syphilis in an active, virulent, infectious and communicable form. That such power is inherent in a municipal corporation, even in the absence of constitutional or legislative provision with reference thereto, this court does not doubt; but this court need not decide or discuss that question, since Section 2059 of the Kentucky Statutes expressly authorizes the establishment of boards of health in cities such as Lexington, and Section 3058, which is a part of the charter of second-class cities, confers on the city council authority "to establish and enforce quarantine laws and regulations to prevent the introduction and spread of contagious diseases in the city, and within two miles thereof . . . to establish and maintain public hospitals within or without the city . . . to secure the general health of the inhabitants by any necessary measure . . . to constitute a board of health, and elect or appoint necessary health officers."

Construing these and several related statutes, this court held in Hengehold v. City of Covington, 108 Ky. 752, 57 S. W. 495, that cities of the second class are expressly authorized to empower the local health board to order the removal of persons infected with smallpox to a properly equipped pesthouse, and to enact "additional reasonable regulations to prevent the spread of epidemic diseases." By no course of reasoning can the fact that smallpox, an epidemic disease, was there involved differentiate that case from this one involving syphilis, a contagious disease, since the provisions of the charter of the city under which that conclusion was reached refer to contagious rather than epidemic diseases. Whether or not such power may be conferred on the health officer alone was also involved and decided in that case, the reason for holding that it could be so conferred being stated to be that "in such cases the necessity for immediate action is imperative, and it is not unreasonable to permit the health officer, or less than a quorum of the board, to order such removal in a case where it does not appear that the removal would endanger the patient's life." The court is, therefore, clearly of the opinion that the city had the power to authorize the health officer alone to cause the plaintiff's removal to and detention in the hospital quarters of the city jail especially prepared, equipped and designated as a quarantine area for persons afflicted as admittedly she was.

The court does not pass on the validity of the provision of the ordinance authorizing the health officer to quarantine persons "reasonably suspected of having" the diseases named, or on the legality of the plaintiff's arrest on orders of the health officer issued on information and belief merely, since it stood confessed on the record that she had syphilis in a contagious form, which was established by an examination voluntarily submitted to after her arrest.—J. A. M. A.

Book Reviews

Recipes for Institution Collected and Edited By the Chicago Dietetic Association. New York. The Macmillan Company, 1922. Price, $1.50.

This work has been compiled from recipes contributed by some seventy dietitians, members of the American Dietetic Association, who are actively engaged in Institutional Cafeteria or Tea-Room work. The recipes are therefore practical and workable, and have the merit of individuality.

The Medical Clinics of North America (Issued Serially, one number every other month). Vol. VI, Number III, November, 1922. By New York internists. Octavo of 365 pages and 21 illustrations. Per clinic year (July, 1922 to May, 1923). Paper, $12.00; Cloth, $16.00 net. Philadelphia and London. W. B. Saunders Company.

Contributors to this number are Drs. Allen, Bass, Blumgarten, Boas, Buerger, Bullowa, Cecil, Fishberg, Guion, Canter, Kraus, Mosenthal, Hornstein, Ottenberg, Pardee, Ratner, Riley, Sherrill.

A Manual of Gynecology. By John Osburn Polak. Second edition thoroughly revised. Illustrated with 139 engravings and ten colored plates. Philadelphia and New York. Lea & Febiger, 1922. Price, $4.50.

In this work an attempt is made to embody the progress that has been made in Gynecology during the last decade. The text has been thoroughly revised and reillustrated, and the chapters on menstruation, pelvic inflammation, ectopic pregnancy and sterility have been entirely rewritten. More space has been given to the pathology of the several lesions and more emphasis placed on its relation in the symptomatology. In this

work all theoretical discussions have been omitted, and in question that are still debatable the writer has presumed to give his individual opinion.

Diseases of the Nose and Throat. By Cornelius G. Coakley, M. D. Sixth edition, revised and enlarged. Illustrated with 145 engravings and 7 colored plates. New York and Philadelphia. Lea & Febiger, 1922. Price, $4.25.

In this work as in previous editions the author has attempted to provide a compact manual answering the needs of both students and practitioners. This edition has a new chapter upon diseases of the nasal vestibule and attention is called to additional articles of sinusitis in children, Vincent's angina, parapharyngeal abscess and a direct examination of the upper air and food passages.

Getting Ready to be a Mother. By Carolyn Conant Van Blarcom, R.N. With an introduction by J. Clifton Edgar, M.D. and Frederick W. Rice, M.D. New York. The Macmillan Company, 1922. Price, $2.50.

Feeding, Diet and the General Care of Children. By Albert J. Bell, M.D. Illustrated. Philadelphia. F. A. Davis Company, 1923. Price, $2.00 net.

This book is intended for mothers and trained nurses. All reference to treatment which should be administered by the physician has been omitted and information helpful to the mother and the nurse has been included. The author gives considerable space to the subject of food. with reference to the teeth. In this work are included diet lists for the first twelve years of life, specifying varieties and definite amounts of food, with their food values, age, weight and height are included as well as mentions of foods rich in vitamins, substances essential to life are emphasized.

Diseases of the Ear, Nose and Throat, Medical and Surgical. By Wendell Christopher Phillips, M.D. Sixth revised edition. Illustrated with 578 half tone and other text engravings, many of them original; including 37 full paged plates, some in colors. Philadelphia. F. A. Davis Company, 1922.

In this work much revision has taken place over the fifth edition. The author has eliminated methods and procedures which have become obsolete and has added many items of new and up-to-date material.

Principles and Practice of Infant Feeding. By Julius H. Hess. M.D. Illustrated. Third revised and enlarged edition. Philadelphia. F. A. Davis Company, 1922.

In the preparation of this edition the chapters on vomiting, colic and flatulence, constipation and abnormal stools have been completely rewritten. The classification, nomenclature and pathogenesis of the nutritional disturbances have been revised to conform to the latest researches. New chapters dealing with rickets, scurvy, spasmophilia, acidosis and anemias of infancy have been added.

Medical Diagnosis. By Charles Lyman Greene, M.D. Fifth edition revised and enlarged with fourteen colored plates and six hundred and twenty-three other illustrations. Philadelphia. P. Blakiston's Son & Company. Price, $12.00.

The fifth edition has been revised and greatly enlarged. It contains 75 more illustrations than the former edition. Every section has been expanded by important additions. The sections dealing with polygráphic and electro cardiographic technic and interpretations has been greatly enlarged.

Enlargment of the Prostate. By John B. Deaver, M.D., assisted by Leon Herman, M.D. Second edition with 142 illustrations. Philadelphia. P. Blakiston's Son & Company.

In recent years surgery of prostatic obstruction has been perfected to a remarkable degree. In the second edition the author has brought the subject up-to-date. The book is essentially practical theoretical considerations has been omitted, laboratory test found practical in the authors experience is fully described. The chapter on diagnosis has been fully revised and a section on the use of the cystoscope in prostatic hypertrophy added. The section on embryology has been rewritten.

Correspondence

INFORMATION WANTED

Chicago, Ill., January 31, 1923.

To the Editor: The hardships encountered by new members of the profession could easily be lightened if you would support a suggestion that part of the Journal be set aside for instruction, meeting and management of patients' records, narcotic records, which are considered necessary by the Internal Revenue Department.

The necessary procedure to get patients in County Hospital, Municipal Sanitarium, etc.

What hospitals are closed to others than members of the staff?

What to tell a patient who wants to go to a definite hospital that is not open to members of the Chicago Medical Society?

How to get on a hospital staff, methods ethical of publicity, or so-called advertising one's name and location. J. E. W.

A FATAL PROGNOSIS

This is the story of Johnny McGuire,
Who ran through the town with his trousers on fire.
He went to the doctor's and fainted with fright
When the doctor told him that his end was in sight.
—*Jack-o-Lantern.*

Original Articles

ECTOPIC GESTATION WITH REPORT OF CASES.*

THOMAS W. NUZUM, M. D.,
JANESVILLE, WIS.

Ectopic gestation occurs sufficiently often, is attended with such alarming symptoms, and if not early recognized and properly treated, is attended with so high a mortality rate that it is properly classed as one of the major causes of an acute abdomen.

The primary attachment occurs in the tube in the majority of instances, and when the tube becomes over-distended, which occurs at the end of 4-8 weeks, it ruptures, causing more or less severe pain, shock and hemorrhage often accompanied by vomiting and syncope, at which time the fetus dies or the ovum becomes attached to some of the surrounding viscera, also retaining some attachment to the ruptured tube.

From this time on the ovum continues to grow and form for itself a sack composed of the uterus, broad ligaments, omentum and intestines, a number of cases having been recorded where full term pregnancy was reached.

1. The most frequent cause of this condition is tubal disease, this making the descent of the impregnated ovum from the peritoneal cavity to the uterus through the tube more or less difficult and slow.

2. Double uterus with more or less deformity of the tube.

3. Sterility from lack of development, stricture of the tube, peritoneal adhesions or accessory tubal ostia.

The intestines, omentum, uterus, broad ligaments and peritoneum becomes vascularized and so firmly attached as to form a portion of the sack from which it is quite impossible to separate them.

The ovum may rupture into the broad ligaments and there develop, or the fertilized ovum may remain in the ruptured graafian fallicle. Williams has proven that the fertilized ovum has traveled from the corpus luteum of the opposite side, and may have become enlarged to such an extent as to become stuck in the tube.

A history of gonorrheal salpingitis has been found in 66 per cent. of the cases by Kustuer.

Obritz found adhesions of the tips of the fimbriae in fifteen out of twenty-three cases. Mandel and Schmidt ligated one tube in fertilized rabbits and pregnancy occurred in the distal end of the ligated tube and in the opposite tube. When both were ligated they developed in the distal end of each. When the ligatures were applied to the uterine ends extra-uterine pregnancy did not occur though dead ova were found in the tubes.

2. On physical examination the uterus is enlarged, the parts are blue and congested and the uterus is pushed to one side when the ovum has obtained considerable size. Often a decidua is shed which is a complete cast of the inside of the uterus. This has diagnostic significance when found.

The early symptoms are: 1. Missed or unnatural menstrual period followed by more or less dribbling as a rule, and breast phenomena which are common to early pregnancy. 2. At the end of 4, 6 or 8 weeks a sudden attack of pain, faintness, shock and maybe nausea and vomiting occurs from which the patient may rally after a time, unless the amount of hemorrhage is great and continues, in which case prompt surgical relief is necessary to prevent a fatal issue.

Rupture may take place into the broad ligaments, in which case the fetus may continue to develop and possibly go on to term, or into the peritoneal cavity, where the fate of the ovum will depend upon the amount of hemorrhage or whether the placental attachment has remained intact, in which case abdominal pregnancy may occur as in one case here reported.

Diagnosis. By bimanual examination one can determine before rupture takes place that there is a small tumor mass in one fornix and this in connection with the symptoms will warrant one in making the diagnosis.

Many cases, when the rupture takes place early and hemorrhage is not extreme, recover without a diagnosis having been made, or the symptoms are attributed to miscarriage and the uterus curetted, as I have many times observed, or as appendicitis, uterine colic or merely colic.

I have known cases even where the symptoms were alarming, the amount of hemorrhage quite large and the necessity of immediate operation

*Read before annual assembly of Tri-State District Medical Association, at Peoria, Ill., Oct. 30, 31, Nov. 1, 2, 1922.

seemed urgent, recover after exacuation of a so-called pelvic hematocele.

The diagnosis is usually easy if one can secure a careful and intelligent history and link this with the physical findings.

The missed or unnatural period, the dribbling over period of weeks, breast symptoms which are strongly suggestive of pregnancy, attacks of pain more or less severe, the sudden onset of pain, collapse, shock, syncope, nausea and maybe vomiting are all indicative, and in a short time showing evidence of severe or extreme loss of blood such as rapid feeble pulse, pale, blanched countenance, and nausea, sub-normal temperature, cold, clammy sweat, and upon bimanual examination one can determine the presence of a mass at the side or posterior to the uterus.

1. Without a careful history one might easily mistake the conditions for an appendiceal abscess, especially where the mass is on the right.

2. A ruptured stomach or duodenal ulcer seldom occurs without a history of digestive disturbances of a recurrent nature which have extended over a long period of time. The sudden onset following a full meal, the intensity of the pain, the location of the pain are quite in contrast with that of a ruptured ectopic.

3. A gangrenous or ruptured gall bladder would give symptoms much like the former and here one must consider the history of former digestive disturbances, attack of colic with pain extending to the right scapula, jaundice, more or less marked tenderness and rigidity in the hepatic region and a palpable mass may often be made out below the liver margin.

4. A cyst with a twisted pedicle may cause menstrual disturbances which simulate a ruptured ectopie, but the symptoms come on more gradually, are less severe, and unless there is much peritonitis and distention one can outline the tumor by bimanual examination.

5. A diverticulum with obstruction of the bowels gives a history of former attacks of pain of a colicky nature; the pain comes in paroxysms; often the peristalses can be seen and felt on the surface; vomiting is severe and soon becomes fecal; great shock and prostration quickly supervene, more especially if the small intestine is involved and without speedy relief the patient dies of toxemia.

6. Pus tubes are usually bilateral; there is a history of vaginal discharge, urinary disturbance and often menstrual disturbance, with aggravation of the pain at that time. Physical examination reveals the uterus "Eingamuert" or set in a stone wall, as the Germans express it.

In some cases the diagnosis may still be in doubt, but there is very evident an acute abdominal condition which requires immediate surgical relief.

The prognosis in the vast majority of cases is grave without early surgical intervention, but when operated on early with the aid of transfusions when required, the percentage of recoveries is large; without early and proper surgical interference the percentage of mortality is high. Medical treatment is limited to relief of pain and to combat symptoms as encountered.

REPORT OF CASES.

1. Mrs. B., a young married lady of 22, had the usual signs of extrauterine gestation and pain, nausea, syncope, shock extreme and a mass could be felt in the right fornix and Douglas' culdesack. Upon the history and findings a diagnosis of extra-uterine gestation was made and an operation speedily performed.

The right tube was ruptured and adherent to the sack. The uterus was double each body having a separate cervix and the septum in the vagina reached to within two inches of the ostium vaginae.

She made a good recovery and five years later gave birth to a fine son and this was followed rapidly by 4 or 5 more children.

2. Another was a young married woman with her first pregnancy. She has been very ill for nine days, was treated for abortion and curetted, also treated for displaced uterus. When I saw her she was suffering from peritonitis, but the history and findings were classical for a neglected extra-uterine gestation which had ruptured, bled profusely, excited an active peritonitis and upon opening the abdomen we found a ruptured appendix, complicating the case with an extensive peritonitis which rapidly proved fatal.

The pelvic contents were evacuated through the vagina and consisted of some three pints of infected blood clots.

Our records show 29 cases of ectopic gestation with three fatalities. Another was due to influenza complicated by double pneumonia which came on one week after operation when the patient was well on her way to recovery. This occurred at Ft. Sheridan during the first onset of influenza and she was in the hospital where the boys were dropping away fast.

On the day of her death four died in that hospital inside of thirty minutes, all of flu-pneumonia.

This lady was the wife of an officer. The diagnosis had been made before it ruptured, but

operation refused; later she was curetted by our superior officer and only came to operation after rupture had taken place and her condition from pain, shock and hemorrhage was extreme.

Two cases of severe type refused operation and recovered after a protracted illness.

The last case which I wish to present was as follows. Her weight three months before was 157 pounds, at present 132 pounds.

Her family history was good, with the exception that one sister died from cancer of the breast. She had never been ill.

Last January she was seized with severe pain in the abdomen suddenly; she had been constipated for two weeks before; she went to bed, took enemas which gave relief, was confined to bed for two days, and has not been well since, having suffered from abdominal pain and was compelled to take physic each afternoon.

Physical examination: Appetite is poor, gas on stomach, distress after eating, constipated, heart rapid and feeble, pulse 110 and temperature 99½, coughs some and raises a trifle, sleeps poorly and sweats at night, has much abdominal pain, is very nervous, passes urine often with marked distress, urine was negative, tonsils are diseased and large, menses absent since January last. There was a bloody watery discharge which had been present for four weeks past; pelvic examination revealed a large hard tumor mass which filled the pelvis and extended to the navel.

The uterus was moderately enlarged, was crowded up above the pubes and a small polypus extended out from the cervix.

The vagina and all parts were very blue, no fetal heart nor bruit could be heard, nor had she felt motion at any time. The breasts were large and contained milk.

The x-ray revealed a child present. She returned home under the care of Dr. Dewire and I am indebted to him for the following report:

"Patient was taken seriously ill on May 27 and Dr. Dewire summoned, complains of aching over body, throat dry and feverish. Temperature 101 F., pulse 120 and weak. Some cough and expectoration. Some small liquid bowel movements and very frequent pains of griping nature; very restless. Anodynes and antipyretics given and hot applications applied to abdomen. June 1, patient weaker, still coughing, breathing labored, abdomen tympanitic and tender, pulse rapid, temperature 102, respiration 45, pulse 120; June 2, Dr. Nuzum in consultation, pelvis full, vagina and cervix blue, mass back of womb and motion of child felt in it. Uterus not palpable because of distention. Patient put in knee chest position and gravity helped to relieve pressure in pelvis. This position maintained from 10 to 20 minutes every four hours. June 6, Dr. Nuzum saw her again; mass higher in abdomen, womb plainly palpable, anterior to mass and empty. Congestion a little better, but patient growing weaker. Peitonitis subsiding. Lips and extremities purple, circulation poor, but no heart audible. Fect and ankles became edematous and patient died on morning of June 7. Autopsy at request of family at 2 P. M. A woman somewhat thin, with well formed and filled breasts, abdomen rounded like six months' pregnancy. Opening in mediam line. Great mass back of womb, dark blue, full of fluid and containing placenta adherent to everything. Intestines matted, placenta of normal size for six months attached to intestines, tube obliterated or stretched beyond recognition, transverse and descending colon full of hard feces. Left tube occluded and full of pus.

Girl baby normal for six months; weight, 2 lbs. and 8 oz.; length of body and head, 10½ in.; circumference of head, 9 in., of chest, 9½ in. Hair on head about ½ in. long and brownish color; nails imperfect. No deformities of arms or limbs.

Child a little thin but fairly plump for mother's condition. Autopsy by Dr. T. W. Nuzum; report by Dr. Dewire.

CANCER*

WILLIAM M. HARSHA, M. D.,
CHICAGO

There is no subject of greater general interest now than that which has been assigned to me. It is only possible to consider a few phases of so important a disease in a short paper. Volumes have been written on it in the past two decades. A great deal of research work, experimental, clinical and statistical, has been done in that time. In short, war on cancer has been declared.

A former Chicago man, the late Roswell Park, in 1899, I believe, started the first society in the United States for the study of cancer, at Buffalo, and Dr. Gaylord, who is still with that institution, and has done a great deal of research in cancer, has favored us here with his reports. Many associations at home and abroad have been formed since that time for the same purpose, notable among which is the American Society for the Control of Cancer, the American Society for Cancer Research, etc. Numerous others have been working in England, Germany and other countries. Doubtless the successful war waged on other diseases and the increasing incidence of cancer in almost every country, if not all, have stimulated the effort to combat the disease, and much has been accomplished, notwithstanding the pessimistic view prevailing.

Thirty years ago, Professor Agnew said (as quoted in the Jour. Am. Soc. for Cont. of Cancer) that he had never cured a cancer of the breast.

*Read before Section on Public Health and Hygiene, Illinois State Medical Society, May, 1922, at Chicago.

Every surgeon now has cases cured for many years.

Thirty years ago the mortality from diphtheria in Chicago was approximately 35 per cent. Then, after the cause was discovered, antitoxin came into use, early diagnosis was made and the mortality dropped to 3 per cent, and should be zero. War was also waged on tetanus, malaria, typhoid, syphilis and tuberculosis, with the result that all these were put on the list of controllable diseases. All this and more in thirty years. During that time, with all the sanitary advance that has been made in fighting these known germ diseases, there has been a steady increase in cancer. An increase of about 1 per cent. to 2.5 per cent. a year, I believe, is the estimate.

It is said that one woman in ten after forty years of age will have cancer, and one man in eleven. There are about 80,000 deaths per year in the United States.

Notwithstanding all the study referred to, the cause is unknown, although much has been learned about the subject which may lower the death rate when the knowledge is generally applied. It is now generally agreed that cancer is at first a local disease and when accessible, especially, cure follows complete removal. There are few men of authority who deny this at present—I know of no surgeon. Dr. Bulkley, a noted skin specialist, is one in opposition to it.

The belief in the past that cancer was a constitutional disease discouraged many from asking early operation, and this contributed to the high death rate by postponing operation, rendered surgery less effective, and reacted on the operative treatment, thus establishing the vicious circle.

Experimental, clinical and statistical research has now fairly settled this question, but people generally have not yet been convinced as they should be. The prevailing disbelief in operation for cancer is an echo of the former theory of the constitutional character of the disease.

That skepticism is emphasized further by the fact that people generally hear and know more about one death from cancer than they do of five cases that are cured. The one death advertises itself, the five cures are not paraded. Early operation will cure 90 per cent. of accessible cancers and a considerable number of those more or less inaccessible. Radium and x-ray will also cure some of these. Every experienced surgeon can show numbers of cases illustrative.

Irritation of one kind or another is now known to be the exciting cause of most, if not all, cancers. Full acceptance of this fact is bound to be the most influential factor in lowering the mortality. The jagged or foul tooth starts the cancer of the tongue or cheek. The hot rice of the Chinaman or the betel nut chewed by the natives of India, and possibly the hot tea or coffee used by other people are factors in mouth cancer. The pipe, maybe the cigar, of the smoker—man or woman—often starts cancer on the lower lip.

Dr. W. J. Mayo is a strong believer in the effects of heat, in whatever form or place, in provoking the start of cancer.

The abuse of food and drink will doubtless be shown to explain the large number of stomach cancers, as well as those of the alimentary tract, including the liver.

Statistics generally show that cancer of the digestive organs is more frequent than that of any other part of the body, especially in men.

Exceptions to this are found in India, where cancer of the stomach is rare, and among aborigines and people in institutions where a frugal diet is enforced.

It seems from available figures that cancer of the stomach is a part of the cost of high living.

People who eat much meat and raw vegetables are the greatest sufferers from cancer of the intestinal tract, while those who, from religious or other reasons, cook their vegetables and eat little meat, have the lowest mortality. The North American Indians are cited as exceptions to the influence of meat eating, but here again the other more natural habits of primitive man, and a more generally restricted diet, come in to offset the meat eating.

Again, skin cancer is most prevalent in those countries where filthy habits prevail, and is least frequent where cleanliness is the rule. In India, where we have noted that stomach cancer is rare, skin cancer is very prevalent. In Japan, where the bath is universal, skin cancer is rare. The theory of chronic irritation by dirt and neglect is borne out. Where cleanliness is considered next to godliness, no skin cancer; where cleanliness is considered next to foolishness, much skin cancer! In parts of India where the natives wear the Kangri basket, with an earthen vessel in which they burn charcoal to keep warm, frequent burns on the skin result in cancer. Where they chew the betel nut they have frequent month cancers.

We all know some sad examples of x-ray burns resulting in cancer starting in the skin. We know, too, that old sores, scars, warts or moles, leucoplakia, intractable ulcers or eczemas, are often the starting point. Gall stones start cancer in the gall bladder, ulcer of the stomach is many times the cause in disease of that organ. Troublesome hemorrhoids precede cancer of the rectum and eczematous nipples often start cancer of the breast. Lacerations of the cervix uteri, together with catarrhal irritations, are believed responsible for many cancers there.

Irritation has been shown to be at least the exciting cause of cancer in the chimney sweep—the gardener who handles soot to sprinkle the plants, the coal tar and aniline dye worker, as well as those of other occupations bringing about chemical or other irritations. Bloodgood claims that in 1,200 cancers of the skin a previous defect in the skin was shown in the history.

Some of the factors mentioned, such as the eating of raw vegetables, the effect of dirt on the skin, filthy habits, etc., have been cited as evidence of the parasitic nature of the disease. (Ochsner.) In my opinion there is all along the line an explanation through irritation as the exciting cause, with no proof of parasitism, and no final solution of the ultimate cause. It is admitted, however, that the theory of parasitism is not disproven.

Cancer is not contagious and has not been proven to be a parasitic disease. A majority of surgeons, especially those in research work, disbelieve in the parasitic theory. I recall that twenty-five years ago Professor Senn (Principles of Surgery) argued against its infectious character, the argument today being perhaps the strongest, i. e., that the identity of the cell growth in cancer, in whatever tissue it is lodged or metastasized, e. g., a squamous cell from the skin lodged in the liver maintains squamous cell type. In known germ diseases the same does not hold.

A most convincing argument against the contagious theory, at any rate, is the immunity of surgeons, nurses or relatives of cancer patients. It has been so rarely found in man and wife that it can easily be a coincidence. Efforts at transference in man from one to another have rarely been successful, and when successful, apparently the growth has not kept up the usual life history or development. The victim of cancer, however, is an easy prey to transference of his own disease to one part or another of his body. The disease is individual to him. So much is he susceptible to transplantation that some tissue change is presumed to make him susceptible. Cancer is seemingly individual to its host, and does not easily transfer its habitat. No characteristics chemical or microscopical change of blood tissue or secretions has been demonstrated, however, in cancer patients; and so far as we know, food, environment, climate, occupation, have little to do with preparing the system for cancer, except as they do so through irritation.

If the aborigines are more immune, it may be we shall have to return to a more simple life, with normal work and frugal fare. It may become known through further study what influence is required to make a person susceptible to cancer. If senility is a cause, it is not progressive with age. Jonathan Hutchinson pointed out many years ago there is a local senility as well as general.

Of course cancer has a predilection for the person or the tissue that has reached its maturity and is ready to decline, but strangely enough it does not increase its ravages progressing with age.

From forty to sixty-five is, I believe, the time of greatest frequency; an average age is about fifty years. It is rarely hereditary, but Miss Slye and others experimenting with mouse cancer find an element of susceptibility of tissues that is considered hereditary, very much, I take it, as we consider heredity in tuberculosis. No method of immunization has been discovered for cancer in man.

What has been said as to the predisposing cause, local character of the disease in early stages, and curability through radical early operation, leads to the conclusion that there is a great responsibility on the physician who is first consulted by a patient with suspected cancer, or with a suspected precancerous condition. In addition to caring for cases of suspected cancer, it is the function of the physician to advise his patient about the risk from neglected warts, ulcers, fissures, tumors, vaginal discharges, digestive disturbances, or other precancerous conditions, and to be an apostle of clean, simple and temperate living.

If it is necessary for a patient to consult a dentist regularly for the protection of his teeth, why should he not consult a physician who can

and should make a thorough general as well as special examination to see that there is no insidious approach of cancer. Where the patient presents cancer in an early stage, a prompt, thorough operation, with follow-up by x-ray or radium, is the best treatment. The late J. B. Murphy showed that in a large percentage of cancers there was no spread of the disease until late in the case, many of them proving fatal before metastasis occurred. Needless to say, Dr. Murphy was a staunch supporter of the local character of the disease in its beginning, and he had proven that early operation would cure.

Notwithstanding the great increase in the number of cancers, there has never been a time when the outlook for the individual patient was as favorable as at present. Bloodgood believes if the patient is seen early by a thorough surgeon, cures in cancer of the breast should reach 86 per cent., of the skin 98 per cent., of the lip or tongue 90 per cent., of the bone 75 per cent.

Dr. Mayo has shown cures in approximately one-third of stomach cancer cases from operation. Broder of the Mayo clinic, 23 per cent. plus of cures in cancer of the genito-urinary tract. Martin thinks uterine cancer should show operative cures of 25 to 48 per cent. They should show better with early diagnosis. These enumerated are the more frequent sites. Stomach, intestinal, breast, skin, genito-urinary tract operations at present are supplemented by x-ray and radium with great advantage, and in inoperable cases much has been done by these agents. Through early diagnosis and prompt surgical treatment, the mortality should be less than half the present figures.

Until the ultimate cause is found our best known means of prevention are restriction and care in eating, drinking and the use of tobacco; cleanliness and proper care of the skin, mucous membrane and intestinal tract; the avoidance of all local irritations, especially those caused by heat; the proper treatment of tumors, ulcers, scars, moles, warts, keratoses, irritating discharges, digestive disorders, etc., and a more simple mode of life, with moderation in all things.

SUMMARY.

Cancer is on the increase, approximately 1 per cent. to 2.5 per cent. annually. Cancer of the stomach heads the list among Caucasians, and its increase and distribution suggests that it is a disease of civilization. The cause is not known, but it starts through chronic or recurring irritation. Cancer is not a constitutional disease starting from within, but a local disease excited from without by some form of chronic or repeated irritation, through some unknown cause. Many precancerous conditions lead up to cancer, e. g., moles, warts, fissures, ulcers, scars, burns, kerastoses, etc.

Cancer remains a local disease until death in about 20 per cent. of cases, and until late in life in many. Heredity does not play an important role, although it is probably a small factor.

Early operation cures nearly all accessible cases if done well and radically. X-ray and radium will cure many superficial cases and possibly many deeply seated. Great responsibility for early diagnosis rests with the physician, and general and special examinations should be made at intervals. Early diagnosis is not always easy—easy diagnosis means often advanced disease and formidable operation.

Further study may solve the problem of susceptibility of a subject, from which other deductions as to etiology or immunity may be made. There never was a time when a patient with cancer had so good a chance for recovery as now, through early diagnosis, removal of cancerous or precancerous conditions, radical operation, radium and x-ray.

I believe the death rate from cancer will be cut in two in the next decade, through the general application of the present knowledge on the subject.

It is certain that the frequency will be greatly reduced by early attention to tumors, moles, warts, kerastoses, irritating discharges, digestive disorders, care in diet, and cleanliness and a more simple and wholesome life.

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DISCUSSION.

Dr. William Fuller: Discussions on malignant disease are always interesting as was the presentation to which we have just listened. Dr. Harsha's

observations on the incidence of cancer of the different peoples of the world are especially interesting and important.

It seems to me, however, that the most important point, the thing most vital to us is to know if there is such a thing as a cure for cancer among our own people now. I think one of the most discouraging things we hear in medical meetings is the statement we often hear to the effect that we have no cure for cancer. Uttered among medical men only this statement may have in it an element of truth; but in a general way it contains an element of untruth. It is a statement which will more likely discourage a cancer victim than any other and is often sufficient to send him to a source for help from which no good can ever come.

Now, then, to say that we have no cure for cancer is wrong. Timely surgery, in all that that term means, applied by a surgeon, in all that that word means, will more often cure a cancer than it will fail to cure it. This is true of cancer situated inside the body, as well as cancer outside the body. Radiotherapy, in the hands of one thoroughly skilled and schooled in its use and application, and in touch with the question of malignant disease, will frequently treatment; when the surgeon could have stated with effect a cure.

What is that bugbear that crops up every time the surgeon meets with a malignant growth, with but few exceptions? To be sure, it is the valuable time which has long since passed when it was amenable to certainty that a cure would likely follow appropriate treatment; when the surgeon could say, your growth is local; is confined to the place in which it started; that complete extirpation of this area takes with it all the cancer cells that make up this growth; and that the operation, or whatever the treatment will not leave behind in some distant area more cancer than is removed.

A cancer of the lip seen and operated early enough will not leave the neck and mediastinum full of cancer cells to show their presence in an early "return" of the growth.

Under the present regime of the practice of medicine we may not hope to see at an early date a material reduction in the mortality of malignant disease. The devotees of the numerous cults are "treating" cancer. Let us be perfectly fair and say that a goodly number of the regular medical profession are still cauterizing, burning, watching and tinkering with malignant growths. I have recently seen three growths "treated" in the physician's office for a period of weeks without the least suspicion that malignancy was being dealt with.

Surely it behooves the scientific medical man to make, or to have made, some provision that practically all this work fall into his hands for treatment if he is the only one qualified to treat it. His life spent in the clinic room or the laboratory qualifying himself to deal with cancer gains nothing if he never meets the cancer patient. When the obstacles between him and the patients can not be overcome, what earthly good to him is his scientific knowledge? Sufficient education, the proper kind of education on the part of the public, and what is even more important, the education of those who are to carry out the treatment, put to very early and timely use will cure much more cancer than we are curing today.

For example, let us take the entire number of malignant growths that will develop in the human race from today on and subject them to the proper kind of treatment at the earliest manifestation, what would the mortality likely be in a few decades? Would it not likely be lowered by startling figures?

As it will scarcely ever prove possible to meet with all cancer patients at that time when intervention by the medical man means so much it remains a fact that operations for malignant growths must be based upon a rather wide scope. That is to say that in two growths apparently alike one will demand the widest kind of a dissection, taking with the growth all adjacent glands and possibly glands and other tissues remote from the original focus. Again a growth will be met with where a limited operation may be done with some assurance that a cure will be effected. But as this distinction must of necessity be more often a guess diagnostically than otherwise, such a procedure should be considered with much forethought, if not great reluctance.

The crux of the cancer question, then, as it seems to me is much more the making use, and effective use, of the knowledge we already possess, than striving for more knowledge. More knowledge is needed of course; but that which we are now in possession of will correct a multitude of our sins in our effort to cure cancer if we can ever learn the value and the meaning of the words "early" and "timely," and will disseminate and spread the proper educational hints among the doctors and people alike.

Dr. Hugh O. Jones, Chicago: I believe the subject of cancer presented before this Section of the Illinois State Medical Society is timely and in the proper place.

The study of vital statistics of recent years shows that there are three factors, largely causative, of the mortality in the middle age group. That is, kidney diseases, heart diseases and cancer.

As the author of the paper has shown and as the other speaker mentioned, while we do not know the cause of cancer we do know that early intelligent interference gives results. And I think that a message from this Section to the profession at large on the subject of cancer and an intelligent propaganda for the laity calling their attention to the early symptomology, and the conditions which might later lead to cancer, would bring them under the careful supervision of the proper men and will help a great deal in reducing the increased mortality caused by this condition. I think this would be a great movement toward any life extension program that might be instituted by a Section in Public Health.

Dr. William M. Harsha, Chicago (closing the dis-

cussion): As Dr. Fuller said, people have the idea that operations are not of advantage in cancer, due to the many failures that have happened when cancer was operated on late. There is another factor. One case of cancer dies, and it is advertised. Everybody knows about it. The five or six that get well under any kind of treatment don't parade it. You meet people now on the streets every day who have had cancer ten, fifteen or twenty years ago, and they are not on exhibition. So that we don't have the benefit of that part of it.

One thing that I neglected to say and that occurs to my mind, is that statistics show that the aborigines have very few cancers, native Indians and the like. And, also, the figures show that among the inmates of institutions where they have an enforced frugal way of living, there are very few cancers, especially of the stomach. In other words, cancer seems to be a disease of civilization. The more we take of meat and drink, the more cancer we have as a rule.

We have the incidence of cancer of the stomach or intestinal tract very high in this country, in England, Holland, Switzerland and Germany; and we have it very low in India and those places where they cook their food and don't eat meat. A return to the simple life may be one of the important ways to save the race.

CHORIOCARCINOMA FOLLOWING EXTRAUTERINE PREGNANCY*

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BENTON, ILL.

Choriocarcinoma, chorioepithelioma, or syncytioma malignum, synonymous terms for the same malignant condition, has been frequently reported in literature, but in comparatively few instances has the tumor originated in the Fallopian tube or the ovary.

Pollison and Violet[1] in a report of 455 cases cite 12 or 2.5 per cent. as arising in tubal pregnancy. The statistics of Zimmermann[2] show that the patients in whom choriocarcinoma developed gave a history of hydatid mole in 40 per cent.; normal labor, 25 per cent.; abortion, 30 per cent., and extrauterine pregnancy, 2 to 3 per cent. Vineberg,[3] in a recent review of literature, add 78 cases to the 455 reported by Pollison and Violet, but as far as can be determined only one was in the tube. In his citation of Teacher's[4] series of 88 cases, 3 or 4 per cent. followed extrauterine gestation.

Risel,[5] in his study of primary choriocarcinoma of the tube, feels that, despite the adverse conditions which obtain in ectopic pregnancy, choriocarcinoma is here rare.

In more or less authentic cases ranging in age from Marchand's[6] 17-year-old girl to de Senarclens'[7] patient of 38, most of the tumors seem to follow soon after an ectopic pregnancy. All of them were operated upon and there was early recurrence with metatases especially common in the lungs within a few months. The course was rapid with fatal termination in every instance.

The prognosis is usually better in uterine than in tubal choriocarcinoma. The mode of removal or size of the tumor apparently has no influence on the prognosis. Bleeding and a tumor mass are by far the most prominent symptoms. Some give a typical history of ectopic pregnancy as that of Hinz,[8] whose patient had pain five weeks after the last menstrual period, with bleeding and weakness. A diagnosis of right tubal abortion was followed by operation in which the right tube and ovary were removed. Normal chorionic villi were found on histological examination. Three weeks later she complained of bleeding with pain in the lower right quadrant. Two weeks after this an examination revealed an enlargement of the uterus and a mass over the right cornua. The latter was removed. The operation was followed by a rapid loss of weight, pain in various regions, jaundice and death in seven weeks. An autopsy tissue resembling blood clots was found in the lungs, liver, abdominal and pelvic cavities, and all sections contained the characteristic elements of choriocarcinoma.

All of the patients had been operated upon at least once and death occurred from a few hours following the operation to several months.

Bazy[9] aptly describes the tumor mass found in his case as resembling a sponge soaked in blood. Merely touching the surface of the tumor caused frightful hemorrhage. In view of the hopelessness of the treatment, Bazy believes in prophylaxis and thinks every tubal gestation should be considered as malignant and removal early.

In nearly all of the cases a reflex decidual formation was present in the uterus. Metatases have been found most commonly in the lungs, vagina, liver and brain. Unfortunately autopsies have not been obtainable in all instances, so the extent of the metatases have to depend upon the physical examination and symptoms.

Our case of choriocarcinoma developed in a well-proportioned, well-nourished woman, 24 years of age;

*Read before the Surgical Section, Illinois State Medical Society, May 16, 1922.

married eight years, with two healthy children, ages four and six years; one miscarriage before the first child, no complications. Menstrual history regular. Four months ago she had a scanty flow of blood coming on six days after the regular menstrual period. This lasted two months, flowing from two to ten days with short intervals between, associated with pelvic distress and pain in the back. The flow of blood ceased and the last two months there was a serous discharge noticed with no bad odor. Ten weeks ago she observed a small mass in the lower abdomen which grew rapidly.

On physical examination her general appearance was good, with a normal amount of subcutaneous fat. Weight at the time was 135. Her normal weight was 150 pounds. Temperature 98, pulse 84, hemoglobin 85. There was a firm, movable, globular mass arising from the pelvis occupying the right and middle portion of the lower abdomen and extending almost to the umbilicus. The cervix and vaginal mucous membrane showed nothing abnormal. The uterus appeared to be a part of the tumor mass.

A diagnosis of uterine fibroid was made and she was operated on November 7, 1921.

The operation revealed a dark red, fleshy, firm tumor mass about the size of a man's head arising from the pelvis in the cul-de-sac and showed rounded elevations studded with coarse granulations resembling a cauliflower. The tumor was very vascular, bleeding easily from the granulations. It arose from the right tube, the fimbriated end of which was spread out bell-shaped, disappearing within the mass. Parts of the ovary were recognized in the tumor. It was adherent to the broad ligament, posterior part and fundus of the uterus, forming a cap over the organ. It was easily separated from the latter, leaving small punctate oozing points. As far as could be determined, there was no involvement of the musculature, the attachment of the uterus being only by fibrous adhesions. The uterus appeared normal in all respects. There was no infiltration of the broad ligament. The omentum with enlarged veins spread over and disappeared within the mass. The small bowel and sigmoid adhered in places so intimately that it was necessary to cover raw bleeding surfaces. The attachment to the bowel was even more intimate than that to the uterus.

The entire mass was easily removed with the right tube and ovary. There was no other tumor masses discernible within the abdomen, although a small amount of blood-tinged fluid was present on opening the peritoneum.

On gross examination the tumor mass somewhat resembled the liver in shape, was approximately seven inches in the anterior posterior diameter and ten inches from left to right. The outer surface was irregular with many broad flat nodules covered with coarse granulations. The color was dark red. The entire mass in many respects resembled very much a placenta with its cotyledons, but was firmer in consistency. On one side was a greyish white area, which appeared macroscopically to be the ovary. On cross section the tumor was solid, granular, dark red in color and streaked with grey strands of fibrous tissue. Much blood oozed from the cut surface.

The histology of the tumor is quite characteristic of choriocarcinoma. Large or small irregular groups of Langhan's cells either alone or in disorderly relation with syncytium or masses of syncytium are penetrating the stroma (Fig. 1). The latter is a loose structure with long spindle cells separated by an edematous fluid and displaying considerable round celled infiltration.

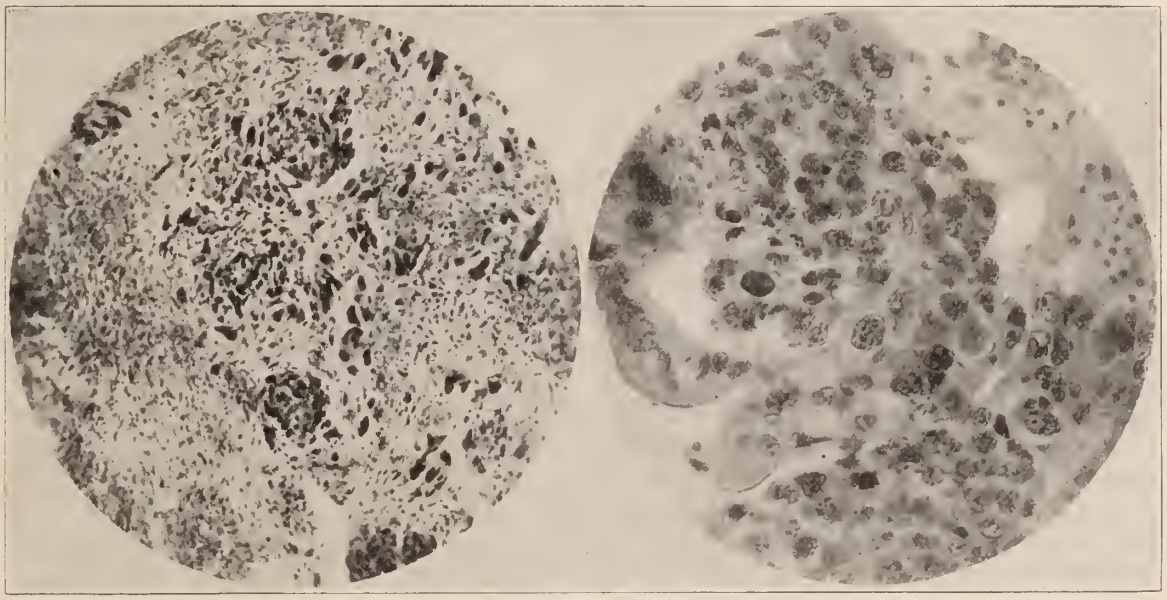


Fig. 1. Choriocarcinoma. Deeply stained masses of syncytium invading the stroma. Mag. 120.

Fig. 2. Choriocarcinoma. Masses of syncytium in apposition with Langhan's cells. Mag. 275.

Areas of hemorrhage are present in large numbers throughout the entire mass, some sections appearing to consist only of blood with tumor constituents.

The normal structure of chorionic villi is entirely absent. The Langhan's cells are larger than normal with hyperchromatic nuclei and frequently contain mitotic figures. In some places the syncytium is in close apposition with and appears to fuse with the former cells. (Fig. 2 and Fig. 5.) Here the nuclei are fairly regular and the acidophilic staining reaction of the cytoplasm easily distinguishes these masses from all other cells. In other areas isolated portions of syncytium varying in size and spread profusely throughout the hemorrhagic strom is the predominating feature. (Fig. 4.) The nuclei are deeply stained and may form large giant cells with nuclei of enormous size.

The recovery was uneventful until the 10th day, when she complained of bladder distress. Seven days later a foul blood-tinged vaginal discharge appeared, and two soft ulcerating areas were found in the anterior vaginal wall. On the 17th day she complained of severe pain in the right lower chest, with a scant expectoration of dark blood. Impaired resonance and diminished breath sounds were present in the right base. The pain became a little less severe and she was removed to her home, where she was permitted to sit up a part of the time, although she was failing rapidly. At this time a mass had appeared under the liver which was, as far as could be determined, a part of the liver and probably a metastasis in the latter.

She died four weeks after the operation in a sudden attack of dyspnea. We were unable to obtain an autopsy.

We wish here to give a short summary of Risel's[5] case which in many respects is similar to the one just reported.

A woman of 35 with regular menstrual periods had three normal pregnancies. Five years after the last pregnancy she had bleeding every 8-14 days, which lasted for 8 days, the last two accompanied by severe pain. On vaginal examination an ill-defined mass the size of a child's head was felt posteriorly. Diagnosis was ovarian cysts and left pyosalpinx.

On operation a tumor was found behind the uterus, adherent to the surrounding structures so that complete removal was impossible. In appearance it resembled a placenta, and sections showed it to be a chorioepithelioma.

After an uneventful recovery the patient was apparently well for two months but died five months later with metastases in liver and lungs with no indications of tumor growth in the uterus. With the exception that this patient lived for seven months after the operation the two cases have almost identical courses and findings.

Although it was impossible to obtain an autopsy we believe that we are justified in stating that the tumor was primary in the tube, secondary to tubal pregnancy. The blood appearing early was due to decidual reaction in the uterus, ceasing in eight weeks, not to reappear. The location of the tumor mass appearing to arise from within the fimbriated end of the tube, the normal appearance of the uterus and the absence of multiple tumor masses at the time of operation all strongly support this conclusion.

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DISCUSSION

Dr. J. J. Moore, Chicago: The rarity of this tumor is shown by the fact that in a careful perusal of the literature Dr. J. B. Moore found only fourteen cases; also there were only 770 cases of chorioepithelioma of the uterus reported. We all know that there are a great many more cases that are not recorded. Since there were only 14 cases reported of the tubes and ovaries, it shows that this condition is either frequently overlooked or that it occurs but rarely. We purposely left out the chorioepitheliomas of the ovary, because there is still a question about certain of these tumors being teratomas. Such teratomas of the ovary occasionally resemble very much the choriocarcinoma of the ovary. At the same time we have teratoid tumors of the testicle that are diagnosed as choriomas. Ewing says we should not call these choriocarcinomas until the individual has had metastases in the lungs. Those cases that are reported had growths in the lung which had the typical characteristics of the choriocarcinoma of the uterus.

Dr. Carey Culbertson: This case is an extremely interesting one and Dr. Moore is to be thanked for having worked it up so well and for reporting it.

Such cases are really pathologic curiosities, they are so rare. In my experience at the Cook County Hospital, since 1913, I have seen but one case of chorioepithelioma following a tubal pregnancy and we have many cases of tubal pregnancy there. Both Kynoch and Ries have recently reported cases of chorioepithelioma following ovarian pregnancy, but from the masses described it would be difficult to say whether the growths arose from a tubal or ovarian pregnancy. Relative to the case so well described by Dr. Moore. that it is a chorioepithelioma there is no question from the sections that were shown. I prefer the term chorioepithelioma to that of choriocarcinoma. It is true that in some of these tumors the growth is made up almost entirely, as far as the sections show, of syncytium and in others almost entirely of Langhans' cells, but as a matter of fact nearly all sections show both types of cells, exactly as these sections show. Hence, they are chorioepitheliomata, and it is not easy to group them into subdivisions.

Now there is one lesion, a pathologic entity that

has been described during the last year by Sampson, which has to be taken into consideration from the standpoint of differential diagnosis and which may be a factor in explaining ovarian pregnancy, that is the so-called "chocolate cysts of the ovary." These cysts contain a hematoma of the ovary ruptured or unruptured, in the wall of which is found mucosa endometrial in type These cysts rupture, and in doing so probably carry along clumps of this mucosa and implant them in various portions of the cul-de-sac of Douglas, giving rise to adenomyomas. If we have material of that sort in the ovary, its presence can explain ovarian pregnancy. Having an ovarian pregnancy it is easy enough to see how we get chorioepithelioma just the same as if we have tubal pregnancy. I am not in accord with the opinion that every ectopic pregnancy should be regarded as a malignancy. We see a great many ectopic pregnancies, chiefly tubal, and some of them show relatively little actual pathology. I have seen two cases of tubal pregnancy this past winter with no distortion of structure of the tubes, in both cases the implantation being in the fimbriated end, the spill of blood being into the peritoneal cavity and small in amount. This undoubtedly explains those cases of ectopic pregnancy that are never recognized and that disappear spontaneously.

Dr. J. B. Moore, Benton (closing the discussion): I want to thank Dr. J. J. Moore and Dr. Culbertson for their interesting discussion. I have nothing further to add.

THE EDEMATOUS CARDIOPATH.*

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In apology for the symptomatic character of my title I call attention to the frequency of edema in cardiopathic states and to its marked effect on the minds of the subject and his friends. Aside from cardiac angina there is probably no symptom of heart disease whose presence so far disturbs the equilibrium of the patient or whose disappearance causes as great satisfaction. If the physician is unable to relieve edema it will be difficult for him to maintain control of his patient, whereas the relief of this symptom will enable the patient to cheerfully face an inevitable fatality with comparative composure and with complete faith in his medical attendant.

Without considering the physical or physiological laws governing the occurrence of edema as far as the tissues affected by it are concerned, it is plainly the effect of diminished circulation in the kidney and to such modification of the special excretory function of the kidney as may result from changes in the organ itself. This latter question brings forward the time-honored argument as to the relation of heart and kidney disease. The historical features of this will be omitted. Our views, however, of the evidence at hand of the kidney's responsibility in these cases has undergone some change in the light of modern observations as to the relation of kidney ability, as evidenced by function tests and retention products in the blood, to organic changes in the kidney structure affecting its physiological integrity.

It was for a while thought that a definite slowing of kidney activity as shown by the phenophthalein test, especially when supported by the rentention of non-protein nitrogen and creatinin in the blood, was sufficient evidence upon which to base conclusions of the presence of definite types of kidney change, especially when supported by those urinary findings which were regarded as positively indicative of some type of nephritis. Present opinion, however, based upon the correlation of clinical and necropsy findings, appears to throw doubt, within certain limits, upon the reliability of function and retention tests, as well as urinary findings, as evidence of definite kidney change in connection with cardio-renal disease, it having been shown that these findings, in both regards, may be present, except perhaps in marked degrees, in conditions of passive congestion of the kidney only. The fact that pathologists are at times unable to definitely discriminate microscopically between the effects of passive congestion of the kidney and certain types of organic changes, and have to depend on microscopic examination to settle the question, especially in the glomerular types of nephritis, may go far to excuse the clinician if his deductions should be wrong in this connection.

Richardson defines two main types of kidney changes: One in which toxins irritate the cells lining the glomeruli which proliferate and pack these bodies, preventing the passage of blood (glomerular nephritis); and one in which there are arteriosclerotic primary changes in the arteries supplying the glomerulus and ultimately a fibrosis. These processes may be combined, but usually they run true to type, though the differentiation may be very difficult.

Cabot admits inability to explain retention increase with passive congestion only, but maintains the fact, holding that clinical interpretation rests more on the degree of retention than on

*Read at the meeting of the Tri-State District Medical Association, at Peoria, Ill., Nov. 1, 1922.

the fact of its presence. He thinks that an increase of nonprotein nitrogen to around one hundred mmg., about three times the normal, with also a marked increase of creatinin over the one or two mmg. normal, is in the present state of our knowledge indicative of nephritis, though our knowledge on this point is yet transitional.

The presence in the urine of albumin, casts, leucocytes or blood corpuscles is not definitive of the existence of nephritis, or of the extent of such if it be present.

The prognostic value of these urinary and blood findings while not of absolute value is relatively of great importance, especially when taken in connection with the state of the arteries and the condition of the heart muscle. General arteriosclerotic changes, together with alterations of the heart, which cannot be charged to intrinsic causes, indicate the probability of associated arteriosclerotic types of kidney changes. Myocardial changes with physical alteration of the heart which cannot be charged to evident arterial disease is indicative of the presence of more acute types of nephritis, probably the glomerular.

There is, however, a period in connection with intrinsic myocardial conditions where the urinary findings due to passive congestion of the kidneys, and the associated degree of retention products, so closely approximate those of certain types and stages of nephritis as to make a correct clinical interpretation of their indications an impossibility. Our inability, therefore, to tell offhand what the kidney will or will not do forces us to rely rather upon the art of medicine than its science in dealing with the situation. Of the three factors involved in the equation: the pump force of the heart, the resistance in the arterial tract and the special function of the kidney, the foremost, of course, is the dynamic ability of the heart. Without the movement of blood through the kidneys we cannot expect improvement in the situation, and as we are dealing with more or less dilation of the left side of the heart in all of these cases, a more complete emptying of the left ventricle is the first thing to be obtained.

As some type of rhythmic disturbance of the heart is almost always a feature of these cases, we may be led to consider whether the correction of these irregularities, in the light of modern observations by the polygraph and the electrocardiograph, is not the most important feature of their management. The classical rhythmical irregularities, however, that are distinctive of abnormal conditions at the seat of origin of auricular impulses, and in the auriculo-ventricular transmission are more characteristic of those myocardial states that may for a considerable period precede the development of the positive dynamic deficiency which causes the edematous condition. Aside from the irregularity produced by left ventricular preponderance, and the auricular disturbance which is a feature of positive mitral stenosis, we are not called upon to take electrocardiographic findings as definite indications for therapeutic measures in edematous cases. Mackenzie has warned us against the dangers of basing therapeutic measures on positive deductions from graphic findings and emphasizes the comparative value of more careful observation of the classical evidence of circulatory conditions.

The fact that the auricular fibrillation of mitral stenosis and the irregularities associated with dilatation of the left ventricle respond to digitalis relieves us of the necessity of considering their rhythmic changes as anything more than features of the dynamic state of the heart whose failure has added edema as a further evidence of its insufficiency. In increasing the efficiency of the heart it is of first importance that we reduce the work of that organ. Rest in bed should be maintained as long as edema is in evidence, as many moderate edemas disappear with this simple measure alone especially when combined with proper diet and elimination by the bowels. The efficiency of the heart is further increased by reducing the resistance in the vascular area which is always increased in persons over forty years old, even though there be no distinct evidence of arterio-sclerosis.

This reduction of resistance is to be accomplished by vaso-dilators, the best of which is opium whose action is sufficiently slow to enable us to maintain a continuous effect through doses so small as to produce no objectionable side effects. Considerable edema may be entirely relieved by rest and opium without other medication. Upon this fact was based the objectionable method of thoroughly narcotizing a patient for a week or ten days in order to rest the heart.

It has been maintained that digitalis does not raise the blood pressure and therefore vaso-dilators are not necessary in connection with its administration. There is contrary experimental

evidence, and even if it does not clinical experience plainly shows that the effect of opium, in the average case after middle life, adds greatly to the relief afforded an over-taxed heart. The usual dose is one-fourth of a grain of gum opium with the average dose of any solid preparation of digitalis, and from three to five drops of the deodorized tincture of opium with the average dose of any liquid preparation of digitalis. Proportionately smaller doses of opium may be combined with less digitalis for continuous administration when advisable. Morphin is not advised for this purpose. Nitrites may be used, but are not satisfactory, except in emergency, because of their evanescent effects. Their action cannot be graded and controlled as certainly as that of opium.

The output of the heart is increased by the use of the so-called digitalis group of drugs. That foxglove is the only one of this group that is useful is a modern view with which I do not agree, but that it is the most reliable and efficient is absolutely certain. There is no such thing as a best preparation of digitalis. A carefully standardized preparation made from a properly assayed sample of the leaf will yield uniform results whether used as a tincture, infusion, powder or glucocide, with certain variations, depending on variable qualities of plant specimens, which may evade standardization, and on variable human reactions which do not follow those of laboratory experimentation. Assimilation and elimination being equal we should obtain definite results from any standard preparation of digitalis, but these conditions are variable and thus specific reactions based on definite dosage per kilogram body weight of the individual is not always obtainable. Moreover, individual idiosyncrasies in reaction, or the lack of it, to certain preparations of digitalis are frequently met with and must be dealt with empirically.

Those preparations of digitalis which are adapted for intravenous or hypodermic use are necessary for emergencies and where absorption by the stomach cannot be trusted, but in ordinary conditions standard galenical preparations will give as reliable results, and at times more so, than can be obtained from more eulogized preparations of the drug. Dosage must still be regulated by effects on clinical symptoms, improvement in rate, rhythm, character of the pulse, relief of dyspnea and increase of kidney function.

I question the advisability of rapid digitalization of the heart in one or two days except in cases of emergency. We should take from four to six days to get the heart thoroughly under the effect of digitalis and then modify the daily dosage as determined by symptomatic conditions. If increase in kidney function is then negligible and edema shows no improvement we should specially stimulate the kidney, which we will refer to later.

Strophanthus is a drug formerly much praised, but lately disparaged by some clinicians. That it has not the punch to control a dilated heart that is characteristic of digitalis is admitted, but in selected cases it gives very satisfactory results, especially in mitral stenosis with a tight mitral opening. Even though dilatation be sufficient to result in the characteristic edema about the loins and the ankles and arrhythmia be marked and persistent, strophanthus will often give better results than digitalis, which may increase the auricular arrhythmia and result in a digitalis block. In these cases the ventricle disposes of all the blood it gets, but in those in which the mitral is rough and rigid, but the opening patent the ventricle develops a hyposystolic state in which strophanthus has not the power to relieve.

The tincture of strophanthus should be employed, administered in freshly made laurel-cherry water or with a couple of drops of dilute hydrocyanic acid to obviate gastrointestinal disturbance. Strophanthin should only be used intravenously and for emergencies. It acts more quickly than digitalis and not more than two or three doses are advisable.

Caffein is a much employed drug for its effects on both heart and kidneys. As ordinarily given by hypodermic and by mouth in tablet form I have not been impressed by its utility. Intravenously its effects are often questionable. The best results I have seen were in cardiorenal lesions with moderate dropsy and marked by lowered kidney function. Here a freshly made salt may be given, using equal parts of sodium benzoate and alkaloid caffein dissolved in distilled water. This gives approximately a forty-two per cent salt and the dose is arranged to equal about two grains of the benzoate of caffein.

While I do not deny the value of the other

drugs of the digitalis group, the effects in edematous cases is practically negligible, and I will not take time to consider them.

In certain cases of edema we may have regulated the heart action, reduced resistance to the arterial flow, employed rest, position, light diet relatively salt free, limited liquids, and all without result as far as getting rid of the edema is concerned. We must then stimulate the kidneys for whether we are satisfied or not as to the condition of those organs, the fact remains that even kidneys with a very limited functional activity may be stirred into sufficient action to eliminate a considerable dropsy. The fact that diminished function and increased retention do not always mean a dying kidney emphasizes the necessity of cleaning up the situation so as to give time to strengthen the heart whose failure is probably at the bottom of the trouble.

Of the special kidney stimulants in use the theobromine preparations are probably most employed. The sodio-salicylate of theobromine, long known as diuretin, being mostly used. It is a useful drug, though at times disturbing to the stomach. It should be given in twenty grain doses every four hours for six doses and then intermitted for a few days. It is not efficient in ten grain doses two or three times daily. If the effect of one course is good, it may be maintained when the kidneys slow up by giving twenty grains as a daily dose. It is best given in distilled water.

Calomel is a valuable diuretic in some cases. It is of little use given in small and frequent doses. It should be given in 3 grain doses three times daily for two days—eighteen grains in all. It is essential that during its administration the bowels should be kept from moving by giving from five to seven drops of the deodorized tincture of opium half an hour after each dose of calomel. The bowels may be flushed out with salts four hours after the last dose of calomel has been taken. When it is impossible or inadvisable to block the bowels for the two days this treatment should not be used.

Theocin is a valuable diuretic in some cases. The sodium salt may be used if desired. It is convenient for administration and rarely disturbs the stomach. It is effective in two or three grain doses two or three times daily, given every second or third day. Its continuous administration is not necessary or desirable. Like all diuretics it is most effective in those cases where passive congestion is at the bottom of the kidney defection, but has appeared to me to be adapted to relieve those cases when the kidney defect was primarily due to moderate arteriosclerotic block of the afferent arteries with secondary glomerular defects.

The action of these remedies may be supplemented at times by the various vegetable duretics or by the acid tartrate of potash as in the old Imperial Drink of the London Hospital, but the simultaneous administration of two of these agents is not advisable. I remember having to introduce three quarts of fluid into a patient who had collapsed from the very rapid reduction of an extreme dropsy from the administration of diuretin and calomel at the same time. It is the rule that by the proper adjustment of the three factors—heart force, arterial resistance and kidney stimulation,—one can secure the relief of edematous states even in the presence of failing heart and kidney. However, there are occasions when we must resort to bandaging the lower limbs to increase kidney circulation where the blood pressure is too low, elimination by the bowels by eleterium, jalap and the like to reduce back pressure on the kidneys just as we relieve an over-distended pleura by removing part of an effusion in order that the vessels may resume absorption, incision of the skin of the legs to reduce the local tension of a chronic edema to a point where circulation may be reestablished, sweating by hot baths or jaborandi where uremic conditions seem imminent, all more or less useful measures which are called for in those cases where the kidney is mainly at fault and the heart is only contributory to the occurrence of the edema.

SURGERY OF THE UPPER ABDOMEN UNDER LOCAL ANESTHESIA.*

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Time will not permit a full discussion of the relative merits of local and general anesthesia, the effects of each upon the heart, lungs, kidneys, liver and other organs, and the relative merits of each in relation to shock, acidosis, nausea, vomiting, thirst, gas pains, wound strain and so on. I shall assume without argument that operations which can be carried out with satisfaction under

*Read by invitation before the Illinois State Medical Society in Chicago on May 16, 1922.

local anesthesia may be considered more safe than where general anesthesia is employed. The objections to the use of the local anesthesia method, such as psychic incompatibility, the loss of time, strain upon the surgeon, and the interference with wound healing I can refer to but briefly.

It is my desire to spend most of the time at my disposal in considering local anesthesia when applied to surgery of the upper abdomen as it has been taken for granted by most general surgeons that this method is not efficient when applied to surgery of this region. It will be admitted, I think, that, provided local anesthesia can be used efficiently in surgery of the upper abdomen, it should be employed. My personal experience leads me to believe that the use of local anesthesia in the upper abdomen is feasible and it is my purpose today to speak especially of the technical points in relation to its use.

To begin with, let me say that I consider the use of local anesthesia a system in itself and that its success depends much more upon the type of surgery employed than upon the manner of inducing anesthesia, and that the pitfalls and the failures of the method when attempted by surgeons are as often due to overt acts in relation to the surgical technic as to errors in the manner of inducing anesthesia. A system, therefore, which is not based upon an appropriate surgical technic as well as upon an appropriate anesthesia technic, will fail.

In order to make it possible to carry out any of the major procedures when working under local anesthesia in this region certain principles must be rigidly observed and the margin of error may be greatly reduced by attention to certain factors which, while of secondary importance, are of sufficient importance to greatly influence the chances of failure. Each step in carrying out any procedure is so vitally dependent upon its antecedents that the adage, "A chain is as strong as its weakest link," may be applied.

Anesthesia Technic. The thoracic nerves involved may be reached by paravertebral anesthesia, an infiltration block or by direct infiltration. The splanchnic nerves involved may be reached by the posterior method of Kappis, the anterior method of Wendling or that of Braun, or by the method which I shall describe below.

A thorough trial of all methods has convinced us that the more simple the procedure the greater satisfaction will result from its use. We therefore prefer the infiltration or infiltration block which reaches the ultimate arborizations of the nerves at or near the line of incision. We introduce the solution under pneumatic pressure. The solution is used freely. Anesthesia is complete in from three to five minutes and the incision may be made at once. We establish splanchnic anesthesia as a rule only after opening the abdomen and depend upon a visualization of the splanchnic area as our ally in carrying out this procedure.

Local anesthesia may be used in children with the same relative satisfaction as in adults. I know of no condition in which the use of local anesthesia may be said to be more appropriate or more satisfactorily employed than in treating hypertrophic pyloric stenosis in infancy. Here again a few simple rules should be followed. The patient's stomach contents should be evacuated through the tube immediately before operation. He should be restrained by attaching the feet to one end of the table while the psycho-anesthetic grasps the arms and makes traction. The incision should be transverse and at the level of the lower border of the liver. The abdomen should be entered without the patient's knowledge, that is, without painful sensation. The abdominal wall should be retracted vertically and the pylorus should be elevated by the use of a pair of delicate, rubber-tipped forceps. Evisceration of the small intestine should be scrupulously avoided and this is entirely possible, provided the proper strategy is employed.

In surgery of the upper abdomen the presence of extensive adhesions and malignant disease, or in some instances an extremely high position of the liver, especially in adipose patients, may preclude the possibility of completing the work under local anesthesia. In all instances, however, a more or less complete survey may be had and general anesthesia may be superimposed upon local at any stage, provided this becomes necessary.

The essential adjuncts to success in carrying out the method consist of an accurate diagnosis, proper planning of the incision both as to direction and length, the proper position of the patient's body which allows us to make use of the force of gravity, the co-operation of the patient, which is obtained largely through the tact

of a trained psycho-anesthetist, and the quality of surgical technic which is demanded by local anesthesia as well as by the patient's best interests.

In introducing the anesthetic solution every effort is made to avoid the production of pain. If the proper precautions are used the patient need be caused pain at but two stages of the infiltration, and this in only the mildest degree; first, during the production of the initial wheal and, second, during the piercing of the aponeurosis at the outer end of the proposed incision. After the production of the initial wheal all subsequent intradermal wheals are made from beneath and are painless. A subdermal rather than an intradermal infiltration is depended upon for the anesthetization of the skin and after depositing a liberal amount of solution beneath the aponeurosis at the outer edge of the rectus the deeper infiltration is carried across the rectus muscles, at least one of which we divide in all surgical work in the upper abdomen.

While making the incision the abdominal wall is elevated in order to avoid pressure upon the structures beneath. The patient is placed in the reverse Trendenlenburg position, and if the abdominal wall is perfectly anesthetized the abdominal viscera should fall away through the force of gravity alone when the peritoneum is incised.

By utilizing the patient's co-operation the intraperitoneal viscera may be caused to advance and recede beneath or through the incision and visual examination may be carried out. This may, when necessary, be followed by a careful digital examination. If the examination should prove painful or if an operation is decided upon, anesthesia of the splanchnic system may be established provided the proper strategy is used. By taking advantage of the co-operation of the patient who is requested to breathe deeply, or to avoid straining, as the case may be, by retracting the liver edge upward and the duodenum downward the solution may be injected beneath the postparietal peritoneum. Even where adhesions are extensive, local infiltration may be used as the dissection proceeds.

We have proven to our own satisfaction that this technic is efficient in carrying out a comparatively large number of secondary cholecystectomies in cases in which cholecystostomy had previously been made. Very rarely during the past five years has it been necessary to administer a general anesthetic in order to complete the operation. In the more simple conditions where adhesions are absent one has still less difficulty.

Take for instance the case of the gall bladder which is obviously diseased and excision is decided upon. The following technic may be employed: A gauze pad is slipped between the duodenum and the gall bladder and the duodenum retracted downward. Another pad is laid over the pyloric antrum and the stomach is retracted toward the left. A third pack in the pouch of Morris exposes the field to the right. The patient is now instructed to take a deep inspiration and the gall bladder will present in most cases so that every spectator in the operating room may plainly see it. It may now be grasped in an artery forceps, or a gauze tractor may be slipped about it, if it is greatly distended or its walls thickened, and maintained in an elevated position while the patient is asked to repeat the expulsive effort. By making traction upward while lifting the abdominal wall the liver is rotated and "up-ended" beneath the costal margin. All of this may be done without distress to the patient in most instances. The visualization will allow one to anesthetize the splanchnic area without difficulty, after which any operative procedure desired may be carried out.

The separation of the gall bladder from its hepatic attachments is greatly facilitated by introducing a copious amount of the solution between the gall bladder and the liver. This makes the dissection more easy and rapid. It decreases hemorrhage and painful sensation.

In stomach operations the greatest difficulty encountered is the necessity for traction. However, by making a vertical retraction of the movable portions of the stomach and avoiding the use of clamps many stomach operations may be carried out with facility. We have not hesitated to divide the ribs in order to obtain a better exposure of the lesser curvature in making gastric resections. To illustrate the strategy that may be employed I might mention one maneuver by which gastric traction is avoided. After gastroenterostomy has been decided upon a tacking forceps may be placed at the junction of the greater curvature and the gastrocolic omentum on the anterior surface, marking the point at which the future opening is to be made. The

colon is allowed to escape from the abdominal cavity. It is elevated vertically just to a degree sufficient to eliminate the folds. The jejunum is visualized and is picked up with long rubber-tipped forceps, thereby eliminating the blind groping for this viscus. After the opening is made in the meso-colon, instead of introducing a hand behind the lesser curvature of the stomach and forcing this organ through the opening, the appropriate point is identified by the means of the towel clip which was previously placed upon the lesser curvature. A second towel clip may be placed opposite this indicator on the other side of the gastrocolic omentum and the posterior stomach wall drawn through. The gestroenterostomy may then be performed without the use of clamps. All vessels are grasped in forceps and ligated and the contents of the stomach and jejunum aspirated by suction.

Provided it is thought necessary to explore or remove the appendix the Trendenlenburg position may be assumed and the appendix visualized by means of vertical retraction.

I wish to call attention to the desirability of so handling the patient that he may reach the operation hour in a proper state of physical and mental quiescence. During the operation his physical comfort must be most carefully looked after. From the time the anesthetic is begun until the operation is completed every effort should be made to anticipate and prevent both mental and physical suffering on the part of the patient. A well-trained psycho-anesthetist is an exceedingly valuable ally, as through the efforts of this individual the surgeon may be relieved of the handicap under which one may find himself when using local anesthesia.

The actual cause of physical suffering is almost entirely in the hands of the surgeon. There are two very important reasons for its prevention; first, it is obviously the surgeon's duty to prevent in every manner possible needless suffering on the part of his patient; second, the production of pain during the introduction of the anesthetic or during the manipulations carried out by the surgeon will result in a reflex combative action which will in most cases interfere with the performance of the future steps of the operation. It matters little whether the production of pain results in restlessness of the patient and a consequent inability to control him, or in an attack of vomiting or contraction of the abdominal muscles, giving the much-dreaded expulsive effort. Failure is apt to result in any case.

In introducing the solution but one painful wheal should be made in the skin, all secondary wheals being made from beneath. The skin should be anesthetized by subdermal infiltration, and all layers of the abdominal wall should be anesthetized before the incision is begun. The nerves should be attacked proximally in every instance and as the infiltration advances the amount of solution injected may be correspondingly decreased. The abdomen is opened between instruments which elevate its walls. The intra-abdominal pressure should be nil. Exposure should be permitted by utilizing the force of gravity and visual rather than digital exploration should be employed as a matter of preference. Retraction should be of the elastic type and a rigid forceful spreading of the abdominal wound should be avoided. Visualization of the splenchnic area allows one to introduce the anesthetic solution subperitoneally. Through the co-operation of the patient the respiratory function becomes an important adjunct. The use of clamps should, as far as possible, be avoided. The illumination should be such that all pockets and deep cavities may be visualized. The pathology should be attacked wherever found and no attempt should be made to forcibly eviscerate the organs. The incision should be so planned that the pathology may be reached with the least possible embarrassment.

If the above simple principles are carefully observed one may, without great embarrassment, perform a considerable percentage of his major surgery in the upper abdomen with facility, dispatch and satisfaction. By following the plan of beginning operations under local anesthesia and resorting to mixed anesthesia when necessary, any surgeon may increase the scope of local anesthesia in his own hands with surprising rapidity. Furthermore, it is my belief that adherence to the regime outlined above will result in increasing any surgeon's efficiency with corresponding benefit to the surgical patient.

DISCUSSION.

Dr. David C. Straus, Chicago: I enjoyed Dr. Farr's paper very much. I simply want to make a few remarks and in the main second what he has mentioned. I want to call attention to a case in point where some form of local anesthesia was in-

dicated in a patient, 72 years of age, who had to be submitted to a rather severe operative procedure.

This patient was admited to my service at the Cook County Hospital February 25 with a diagnosis of subphrenic abscess. He had been operated upon in November, 1921, for a ruptured appendix. The wound drained for some time, eventually healed and then reopened again, discharging pus. Six weeks before admission to the hospital the wound healed. From that time on he had some pain in the right side. Two days before admission he began to have pain, swelling and tenderness in the right upper quadrant of the abdomen just below the costal margin. He had had no chill and no fever. Examination showed that the man was greatly emaciated, that the right diaphragm was displaced upward to a marked degree and this was confirmed by a roentgenogram, substantiating the diagnosis of subphrenic abscess. The only other important finding was a localized swelling beneath the right costal margin anteriorly and this was quite tender on pressure. This mass was dull on percussion and this area of dullness was continuous with the lower margin of the liver dullness. The evening temperature was 98.8, pulse 86 and respiration 24. I believed from these findings that the patient was suffering from a subphrenic abscess and that this was pointing anteriorly beneath the costal margin.

Accordingly under ether incision I made a short right rectus incision with its center over the center of the mass. When the fibers of the rectus muscle were separated a considerable amount of thick yellow pus escaped. I was not sure whether this collection of pus communicated with a subphrenic collection or not, but I certainly did not wish to infect the general peritoneal cavity by any further interference at this time, so I merely put in a drain. There was very little discharge from this wound after that. Three days later another roentgenological examination was made to determine whether there was any change in the subphrenic pathology. There was not. It was evident that the subphrenic space had to be opened and drained. As the patient had been subjected to an ether anesthesia but a few days before, it seemed extremely desirable to avoid another ether anesthesia and the patient's age contraindicated the use of nitrous oxide. Accordingly four days after the original operation under paravertebral anesthesia I resected the ninth and tenth ribs in the posterior axillary line. I cut down to see whether there were adhesions between the diaphragmatic and the parietal pleura. I found the adhesions were well developed there, so that it was perfectly safe to cut through the parietal pleura and the diaphragm at once without any danger of infecting the general pleural cavity. I at once cut through the chest wall and the diaphragm and drained a large subphrenic collection. The patient did not complain of any pain during the entire operation. He made an uneventful recovery and was discharged cured on April 17.

I agree with Dr. Farr that one should not ask the patient whether he has any pain or not. I believe the patient should be told that the only discomfort will be during the administration of the local anesthesia and that the operation itself will be absolutely painless, though he may feel pulling or pressure locally but no pain whatsoever. This morning I operated upon three patients under local anesthesia and I am sure that those of you who were present will substantiate me when I say that I am confident none of them felt any pain. I believe we should extend the realm of local and paravertebral anesthesia.

Dr. E. C. Roos, Decatur: I would like to say in regard to local anesthesia, that Dr. Farr has developed this method of anesthesia perhaps more than any man in the country, especially the infiltration method. I had the pleasure some time ago of seeing Dr. Labot of Paris, France, use his paravertebral method of local anesthesia at the Mayo Clinic at Rochester, Minn. I saw him use it in a number of abdominal cases. A general anesthetic had to be resorted to in the majority of these cases before the operation had progressed very far. Of course, Dr. Labot worked under the great handicap of having some other surgeon operate on the case he had anesthetized. Most general surgeons are not acquainted with the technic necessary for operating under local anesthesia.

I have also seen a great deal of work in Dr. Farr's Clinic. Perhaps in 99 per cent. of the abdominal cases I have seen him do under local anesthesia, no general anesthetic was resorted to.

I think it is the general opinion of the men using local anesthesia in this country that the infiltration method is the method to be adopted by the average general surgeon. The man who uses paravertebral anesthesia has to be an expert at spearing nerves, for that is what it amounts to, and there is more or less danger connected with this method. I am sure we all enjoyed Dr. Farr's motion pictures. They speak for themselves.

Dr. Hugh McKenna, Chicago: I want to say I appreciate very much the pleasure of hearing this discussion. I think Dr. Farr is quite right in saying that local anesthesia is no longer an experimental proposition, but the important thing is to learn how to do it. I say to learn how to do it, because we have seen a master do it this afternoon.

We had occasion to see a lot of local anesthesia used during our military service, something like 652 hernias among other things, representing a total of about 900 operations in one year and probably 60 per cent. of these were done under local anesthesia. I know that although the operations were done very clumsily as compared to the manner in which Dr. Farr has done them, the question of putting in your initial injection after your primary wheal one inch anterior to the spine to catch the iliohypogastric nerve just under the external oblique, we got a deep anesthesia and had no trouble in handling those cases.

I particularly want to ask Dr. Farr in the question

of intraabdominal operations on the stomach or intestines where he gets complete anesthesia has he any difficulty in getting a paresis of the bowel or a distension of the bowel by fluid from an involvement of the sympathetic system.

Dr. Robert Emmett Farr, Minneapolis, Minn. (closing the discussion): I wish to thank the gentlemen for their discussions. In answer to Dr. McKenna I would say if there is one advantage of local anesthesia over any other form, excepting spinal anesthesia, which is a form of local, it is the postoperative absence of gas pains. I have attributed that to careful handling of the viscera. Just recently I had a letter from Dr. P. B. McLaughlin of Sioux City. He has done a great deal of work under local anesthesia. He made a very interesting observation. He had a case of intussusception in an adult with about 18 inches of the bowel invaginated and was unable by any means at his command to force the intussusceptum out. He then injected the mesentery and while waiting a few seconds to see whether he would have a cessation of the pain, the bowel relaxed and the thing dropped out. He sat down and wrote me a letter. I have seen the bowel do this when I had it outside, but in this case it happened right in the abdominal cavity. The main point I want to make is that it is my notion that it is going to be the simplest thing in the world to do abdominal surgery under local anesthesia when we realize certain things. You get a relaxation of the abdominal wall and the absence of reflexes and your patient has no pain when you handle the viscera. We have occasionally torn off a gall bladder while showing visiting surgeons how much traction can be put on the gall bladder with no complaint from the patient. I think we are right on the edge of realizing what we can do in this class of work if we follow certain principles.

THE TREATMENT OF CHRONIC FATIGUE INTOXICATION* **

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In a paper entitled "A Serious Menace and a Way Out," published in the ILLINOIS MEDICAL JOURNAL of February, 1922, and in a second paper entitled "The Symptomatology of Chronic Fatigue Intoxication," published in the same journal but in the September, 1922, number, I have presented some of the facts upon which I base my belief that Chronic Fatigue Intoxication is a distinct disease entity with as definite symptoms as any of the systemic diseases which have been recognized as disease entities for centuries. With this introduction permit me now to outline the treatment which I have used in many instances to relieve patients suffering from this condition.

In the treatment of patients suffering from this affection, four objects must constantly be kept in mind.

1. Maintain or improve the nutrition of the patient as the individual case may demand.
2. Prevent the further accumulation of fatigue material.
3. Ameliorate the symptoms as much as possible.
4. Remove the already accumulated fatigue material.

While I will not take these points up categorically because this does not seem convenient or feasible, all the suggestions made are for the purpose of accomplishing these four objects.

In the early cases little difficulty will be encountered in maintaining good nutrition, if one will simply see to it that the patient has a diet in which the necessary ingredients of proteids, hydrocarbon, carbohydrates, salts and vitamines are properly proportioned, the variety is sufficient, the food is prepared so it will be easily digestible, and attractively served, so that the patient's appetite will be maintained. In the more advanced cases the problem is a good deal more difficult. Here the nutrition has often grievously suffered, the gastric and intestinal juices have been much altered, the patient often is so exhausted that he finds it difficult to properly masticate his food. This exhaustion may reach such an extreme degree that some of the patients actually find it a hardship to eat. I have watched some of them eat and recall one patient in particular who just opened her mouth, put the food in, swallowed it whole just as a chicken or young crow eats. Not being supplied with a crop and a gizzard much of the food naturally went through entirely undigested and acted principally as an intestinal irritant. In such cases it may actually become necessary to pass all food through a meat chopper before it is served.

Nearly all of the severe cases suffer much from hyperchlorhydria, eructation and belching of gas, and constipation. One of the most important matters in the dietary is to prohibit the ingestion of such liquids as tea, coffee, alcoholic beverages and water with the food, in order that the

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gastric juice may not be too much diluted and then, too, the gastric distress is markedly lessened. The hyperchlorhydria must be overcome by the judicious use of the various antacids. In one individual one antacid works best, in the other another, and if the first one does not give the desired result, others must be tried out until the right one is found. The antacids will also assist somewhat in overcoming the pyloro-spasm and the cardio-spasm, the latter of which is probably the chief cause of the eructation and belching, as it prevents the normal escape of swallowed air. The pyloro-spasm is in part unquestionably caused by the attempt of the pylorus to hold back the excessively acid stomach contents. In addition the antacids help to overcome the reduction in alkalinity of the blood, and ameliorate to a considerable degree the nervous irritability from which so many of these patients suffer.

Because of the pyloro-spasm the emptying time of the stomach is often greatly delayed, and then most careful attention must be paid to the feeding interval, for the taking of a new meal when the previous meal is still in the stomach, is likely to still further derange the digestion and cause the formation of toxins in the gastro-intestinal tract. As a rule I find that these patients do best on three meals a day and that few of them can safely take food oftener than that in the twenty-four hours. On quite a number of occasions I have found it necessary to cut them down to two meals a day and on a few occasions temporarily to one.

In addition I have every reason to believe that the toxic substance deposited in the tissues, and so often circulating in the blood, is a protein substance and not until I realized and recognized this fact and eliminated practically all animal proteids except milk, cream and butter from the dietary of these patients, did I begin to get results. Hence I prohibit the use of all meats including fish and sea food, meat soups, meat gravies and eggs, though eggs in moderation in the cookery seem to be tolerated fairly well.

As many of these patients, particularly in the later stages, suffer from severe chronic constipation, it is well to see that they have enough roughage in their diet such as cereals, carrots, onions, egg plant, squash, parsnips, string beans, tomatoes, mushrooms, stewed fruit, spinach, green peas, lettuce, celery, coldslaw, etc. Cooked cabbage must be avoided as it is difficult for these patients to digest and is apt to cause a great deal of gas. Coldslaw on the contrary is very well tolerated by most of them.

Many and various disturbing symptoms appear from time to time during the course of treatment and these call for much ingenuity in their successful handling. Two of the most difficult ones to deal with are pain and insomnia, but they can usually be successfully met without the use of opiates and hypnotics and every effort must be made, if the case is to terminate in a cure, to get along without the use of opium or any of its derivatives. To relieve the distressing symptoms during the time that the accumulated fatigue material is being eliminated is of the utmost importance, for if the former is not done effectually the latter is almost impossible of accomplishment because pain and discomfort are two of the most important factors in the further production of fatigue material.

One of the most distressing of these symptoms is cold feet, naturally more in evidence during the winter months. I have had a number of patients describe it not as discomfort but as actually almost unbearable pain during their waking hours, and so annoying and distressing at night as to rob them of hours and hours of sleep. In these cases bed socks alone are of relatively little value. If, however, the feet and legs are rubbed for five minutes using a mixture of two drams of tincture of cantharides added to one pint of 50 per cent. alcohol and the bed socks are then worn, the patient will be entirely relieved for the night and if comfortably warm and dry foot wear is worn in the daytime they will be soon entirely relieved of this discomfort.

To look after the discomforts and to relieve them as much as possible is very important, but it is even more essential to see to it that no new fatigue material is deposited. One of the most widely applicable and I would say most neglected of all therapeutic agents which we possess is rest and in this disease particularly do we need to employ it. In the less severe cases the ordinary vocation, unless too strenuous, can be continued but the patient should be advised to take as much rest as possible when not actually at work and to pursue his work with moderation. In these cases an occasional fifteen minutes of absolute relaxation with the patient lying perfectly flat, feet and arms outstretched and relaxed, is

of great assistance. The value of this was well understood by Gen. Stonewall Jackson who used it with marked success in his army. Of all the generals of all times he had probably the most mobile army that ever existed in the history of the world. It was so mobile that the Northern generals never knew where he would strike next and greatly over-estimated its numerical strength, and he accomplished it by making use of the following trick: During forced marches he would every few hours direct his soldiers to stretch themselves out perfectly flat on the ground and with all of their muscles relaxed remain in this position for ten or fifteen minutes.

Nothing could be more unsatisfactory than to attempt to treat these people the same way that neurologists treat hypoplastic, constitutional inferiors and patients suffering from functional neuroses. The two conditions are as far apart as the antipodes and must be treated along entirely different lines if we would succeed in any considerable per cent of these cases.

Because of the slow, oftentimes unreliable thinking processes and impaired judgment as well as their inability to adjust themselves readily to new conditions and environment, these patients should be strongly urged not to change their occupation or to go into new important ventures. This observation is made because so many of these patients become dissatisfied and restless, constantly have a longing to try new things with the hope of getting relief in some distant part of the world, and are often advised by their physicians and others to change their occupation. This usually does the patient more harm than good and practically always leads to financial losses and sometimes to financial disaster. I have seen a number of these worn-out city folk buy chicken farms, truck farms and general farms, try it for two or three years, lose most of their money, and return to the city utterly broken in spirit and in purse. I have seen overworked farmers sell their farms, go into business in the city with the same unfortunate end result. The paths of least resistance are the ones which have been most traveled. If these people must work, they will find it easier and less exhausting to follow along the beaten path. They will do best to continue right on in their familiar haunts and occupations and not make new ventures or try to learn new trades. Even the much advised change of scenery and travel is of no permanent value. I have a number of these patients who have traveled from sanitarium to sanitarium and from country to country without the slightest relief, who were permanently cured when placed on proper treatment right in their own home.

In the more severe cases it is sometimes necessary to have the patient stop his work entirely and to interdict physical exercise of all kinds. The physical exercise stunts that so many of these patients are put through must all be stopped if a cure is to be accomplished, because instead of eliminating fatigue material they cause the further production and accumulation of it. In the very extreme cases it may actually be necessary to temporarily put the patient to bed and even to feed him in order to prevent the further production of fatigue material. This is imperative in all cases of chronic fatigue intoxication suffering from high blood pressure.

In the feeding of these cases it is sometimes even necessary to see that the patient does not ingest too much food, for some of them have unnatural, ravenous appetites due to the hyperacidity of the stomach, and the elimination of the excess food ingested actually produces new fatigue material.

One of the important things in preventing accumulation of new fatigue material is to help the patient get rid as nearly as possible of all handicaps; thus the patient with uncorrected hypermetropia, myopia and astigmatism, should be tested out most carefully and proper glasses fitted in order that he may not be continuously subjected to exhausting eye strain. Ankylosed joints should be limbered up if possible, deformed joints should be straightened and made useful, and all bodily defects that can be relieved should be relieved as soon as possible. The unusually tall man should be given suitable tools and all unnecessary stress should be done away with.

Proper diet, rest, and looking after the symptoms as they arise, sometimes make these patients more comfortable, but these alone will never cure them. Sometimes again they are actually made more uncomfortable and unhappy by these procedures alone, because the enforced idleness gives them more time to think about their pains and discomforts. Removing the cause alone may actually lengthen life but sometimes it makes it even more intolerable. This and attempting to

relieve the symptoms as they arise from time to time is not sufficient to effect a cure. And if this course alone is relied upon the patient soon drifts from one physician to another, then from one quack to another, until he gives up in despair, or is finally relieved from his suffering by a premature death due to an intercurrent affection or suicide. In order to forestall these undesirable endings we must devise means by which the already accumulated fatigue material can be removed from the body. Various measures must be employed to accomplish this. The active treatment should have for its object the elimination of all accumulated fatigue material in the shortest possible time with the least risk and discomfort to the patient. Good air, both day and night, is absolutely essential in order that the products of fatigue may be properly oxidized and converted into a form which may be easily eliminated. Suitable baths are also valuable adjuncts. The baths which I have found the most beneficial are sponge baths every morning at a temperature varying from 68 to 72 degrees F., according to the temperature of the room. Three weekly tub baths at a temperature of 93 degrees F., and in extreme cases, particularly where the vasomotor disturbances are pronounced, a Sitz bath at 95 degrees F. with a shower at 80 degrees F. simultaneously for a period of five minutes every evening before dinner. In the extreme cases the use of castor oil is very important. Some of these patients can be saved only if they are given one ounce of castor oil every evening on retiring or the first thing in the morning, in order that the end results of the faulty digestion may be cleared out of the gastro-intestinal tract daily and the fatigue material which may have found its way into the gastro-intestinal tract after massage may also be removed.

In order that the ever present and fearfully exhausting muscle spasm be relieved, we must actually dislodge the already accumulated fatigue material, so that the patient may again relax his muscles. The bow that is always bent is sure to break. We must loosen the strings or the patient cannot get well. And in order to dislodge this fatigue material from the tissues and to permanently rid the system of it, the measures already mentioned must be supplemented by carefully supervised, intelligent massage. Not only must massage be supervised but even the best masseurs must be painstakingly taught the fundamental principles involved in order that they may intelligently follow the directions prescribed in each individual case.

When the patient is completely relieved of all of the symptoms and of all of his fatigue spots, the time for physical exercise and physical reeducation of the atrophied muscles has arrived. Now this remedy is indicated and of great benefit, but if used too early it is distinctly harmful. The exercises must be gradually increased always stopping short of exhaustion. For this purpose I have found the booklet which I published some years ago entitled "Physical Exercise for Invalids and Convalescents" of great assistance and convenience, because the exercises therein outlined are very simple and the dosage can be very carfully regulated. Later more strenuous exercise such as golf, tennis, walking, rowing are indicated and moderate fatigue encouraged, but exhaustion guarded against in order that a relapse may be averted.

CONCLUSIONS

To teach a person to disregard minor bodily discomforts and to bear with equanimity unavoidable pain is a real service. To encourage him to disregard preventable pain is often a positive injury. To make a person unmindful of pain, to deny the existence of a definite ailment which does in fact exist, and to disregard the evident symptoms, is not by any means curing him of his malady. These are often even poorer makeshifts than a narcotic. The advice so universally given these poor sufferers by Christian Scientists, psychotherapists and, I am sorry to say, sometimes even by regular physicans, to disregard their pain, is about as illogical and absurd as to advise a householder to disregard the smell of smoke from the basement where normally there should be no fire, or to disregard the sounds caused by the jimmying of a downstairs window by a burglar. There may, of course, be times when it is prudent to disregard the burglar and there may be times when it may be absolutely necessary to disregard pain, but such occasions surely must be rare. There is a vast difference, however, between on the one hand neglecting to pay attention to the smell of smoke from the basement, the noise of the jimmy of the burglar and the pain of this affection, and on the other,

lying awake nights smelling for smoke, and listening for the burglar and pinching one's self every few minutes to look for pain. Both extremes should be avoided as they are equally irrational and harmful. I cannot see any fundamental difference between the Christian Science healer who denies pain and the psychotherapist and regular physician who disregard pain, or the former when he reads some meaningless jargon to his dupe and the latter when they say "Forget it" to their patients. While it is bad to magnify every little ailment it is stupid to disregard actual pain. Pain is a warning signal which can be no more safely permanently disregarded by the individual than can the red danger signal be safely disregarded by the railway engineer. As children we learned to keep our hands out of fire, to avoid falling downstairs, or cutting ourselves because it hurts. As adults we are provided with similar safeguards. The process of self-hypnotization and auto-suggestion so commonly indulged in nowadays by many individuals who pretend to be well when in fact they are thoroughly miserable is of very doubtful value. "What can't be cured must be endured," like most epigrams, expresses only half the truth. The other half of the truth is, "What can be cured should not long be endured."

PERNICIOUS ANEMIA

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Pernicious or primary anemia is characterized by progressive degeneration of the red blood, alteration in the blood producing tissues, changes in the spinal cord and other tissues generally. Of unknown etiology, insidious gradual onset, with indefinite early signs, by the time a positive diagnosis is reached we know we are dealing with an incurable malady, but nevertheless one which responds at times, very rapidly to treatment.

To go into detail as to the theoretical causes of this disease would be almost like delving into the etiology of eclampsia or cancer. Changes in the stomach, infections, alterations in the spleen, bone marrow, infestation with parasites, notably the Balantidium Coli and Bothriocephalus Latus, intoxication from the large bowel, have or have had their supporters as causative agents, but notwithstanding the fact that about 6,000 die of pernicious anemia annually in this country, and a large amount of research work is being done, almost all agree that the cause is yet unknown.

Of all the theories, there is one which makes a strong appeal, namely, infectious. We are accustomed to associate any disease which runs a protracted temperature, even though very slight, with an infection of some kind, and especially one in which there might be a slight temperature for weeks, often associated with a large spleen. These characters most strongly resemble protozoan infections, and of these the spirochetic. Comparing for a moment syphilis and pernicious enemia we find:

Prolonged low grade temperature in both.

Both are blood cell destroyers.

Both show splenic enlargement in many cases.

Both diseases yield to arsenic or its derivates in a marked degree, which group of agents are almost specific for any spirochetic infection.

Finally, there is a marked analogy in the spinal cord changes, with predilection for the columns of Goll and Burdach and similar qualitative findings in the spinal fluid. Of the contributing or predisposing factors in causation, age stands out, about three-fourths of the cases occurring beyond the age of 36, with about twice the incidence in males. Geographically the disease is more common in Europe, especially in the Thames valley and Switzerland.

Actuarial statistics show about one per cent of the deaths due to pernicious anemia, which is about three times as high as the figure given by the U. S. Health Board, but is accounted for by the fact that a more thorough investigation is made as to cause of death by the insurance companies.

Pathology. There is no characteristic pathological change. A straw or lemon yellow tint of the skin, with absence of emaciation is perhaps the most constant finding. Due to the prolonged anemia, fatty degeneration of the liver, kidney and heart muscle is frequent while atrophy of the stomach is noted in many cases. A smooth, glistening tongue, with glossitis is fairly common. The spleen is often smaller at necropsy, but during life the spleen is enlarged usually. In a series of 50 spleens examined at the Mayo clinic, the average weight was 400 grams, with two of the series having weights of 1,600 and 2,200 grams; the normal spleen weighs about 200 grams. Both liver and spleen show increased de-

position of iron pigment. The bone marrow is dark, shows deficiency of fat globules, with increase of nucleated red cells; in certain aplastic types the marrow shows no change. About eighty-five per cent of cases show spinal cord changes, consisting of ecchymoses in the posterior columns, most frequent in the cervical region, with small areas of degeneration, a multiple combined sclerosis.

Symptomatology. I believe it was Osler who once remarked that the medical acuity of a community could be gauged by the number of pernicious anemias diagnosed.

The onset is insidious. On close questioning, symptoms referable to the gastro-intestinal tract extending over a period of months may be elicited. Muscular weakness, languor and breathlessness on exertion, coupled with pallor, are the symptoms which call the patient's attention to his malady. Anorexia often becoming an aversion to food develops, while epistaxis and ecchymoses occur occasionally. There is always a hypochlorhydria, often achylia, with occasional pain of colicky type in the epigastrium. Inflammation of the tongue and gums occur frequently, while half of the cases show diarrhea at some time, often with occult blood. Hemorrhages from the gums, nose, stomach, or bowel, producing hematemesis or melena are common, and together with the age of the patient and the pallor, suggest malignancy of the stomach or bowel. The urine is usually pale and of low specific gravity, but at times may be dark or smoky from urobilin, due to blood destruction.

Symptoms referable to the nervous system are common, probably the most usual being numbness and tingling of the extremities. A tabetic syndrome, with lancinating pains, loss of reflexes, girdle sensations and paresthesias due to involvement of the postero-lateral columns is seen. A type, due to involvement of the pyramidal tracts, with increased reflexes and spastic gait is described. The presenting symptom in a case I have in mind was numbness and paresthesia, even before the pallor and weakness were noticed. On inspection a patient with pernicious anemia seems well nourished, with a pale lemon or subicteroid tint, blanching of the mucous membranes of the eye lids and lips, sometimes with little cherry red petechial spots, with a flabbiness and loss of turgor of the skin, and frequently some edema of the ankles. The patient seems tired, the pulse is collapsible and sometimes has a canter rhythm. A hemic murmur at the apex is common, and pulsating carotids are noticeable.

The Temperature. At some time during the course of the disease a temperature develops, most usually during a blood crisis,—a mild pyrexia, varying from 97 to 100, present for a period of weeks is almost always found; in the terminal stages a subnormal temperature is common.

The Blood. On pricking the ear, the drop seems to flow out with greater ease than the normal, suggesting a greater fluidity, which is just the case, because there are less cellular elements in the plasma.

The total blood volume is diminished,—marked diminution in the red blood cells is found. This varies, sometimes reaching extremely low figures,—even down to 150,000 per cubic millimeter. The average case shows one and a half to two millions of erythrocytes. No type of anemia so regularly produces so low a red count. Almost all the qualitative findings are present in the red blood cells.

Poikilocytes, with fragmented, crenated, ovoid and other bizarre forms are seen; in the same field may be seen large round red cells, with twice the diameter of a normal one,—the megalocytes. Some writers consider the anisocytosis, or variation in size of the red cells, with preponderance of megalocytes, as a rule forty per cent or more, as a pathognomonic sign of pernicious anemia. Microcytes, little red cells, perhaps only two or three microns in diameter occur, while occasionally an erythrocyte is seen, which has stained with both the hematoxlyn and eosin giving a purplish color—the polychromatophile. Basic stipling is common. This condition may be simulated by small particles of dirt lying in the body of the blood cell, or by a slight precipitate in the stain. Nucleated forms, nomoblasts and megaloblasts are common, much more so during a blood crisis than normally. In counting a hundred leucocytes, perhaps two or three nucleated reds might be found, in the average case.

Another finding, considered almost pathognomonic, is an elevation of the color index,—a plus one index, which simply means, that, although there is a great diminution in the number of red cells, the individual cell is carrying more than its allotted quota of hemaglobin. A normal individual with 5,000,000 erythrocytes, should have 100 per cent hemoglobin. Suppose we have

a pernicious anemia case, with a hemaglobin reading of 50, and a red count of 2,000,000 and we wish to determine the color index, an unknown quantity X. Formulating an equation,—the normal 5,000,000 reds is to 100 per cent hemoglobin, as the abnormal 2,000,000 is to X which when calculated shows X to be 40, or the amount of Hb. the patient should have theoretically. Our Hb. reading, however, shows fifty per cent, or he has 50/40 as much Hb., or he has 1.25 plus index. This finding, when high is a very valuable diagnostic sign. Before leaving the red blood cell, I call attention to the fact that there are certain malignant types of pernicious anemia in which there are no nucleated forms, viz.: the aplastic type, which is considered as a sign that no effort is made on the part of the bone marrow to renew the vanishing red cell. A cell is described, and occasionally seen, in the leukemias and pernicious anemia, known as the Türck cell or irritation form. It is a large cell, resembling a large lymphocyte, with an eccentric nucleus, sometimes with nucleoli, whose protoplasm stains dark blue, being vacuolated. They are rare,—often requiring a prolonged search through many fields to find one. They are simply indicative of a pathological blood.

The White Cells. There is a reduction of the polymorphonuclear with a relative lymphocytosis. Myelocytes are sometimes seen. The blood platelets are reduced. To recapitulate the blood findings:

1. Plus one color index.
2. Megalocytosis.
3. Polymorphonuclear leucopenia, with lymphocytosis.
4. Presence of nucleated forms, stipple cells, poikolocytes, Türck cells. Myelocytes are usually found, although the blasts are absent in the aplastic type, while all the other forms may be seen in other blood states, but the combination of the first three findings bespeak pernicious anemia.

Diagnosis. A patient usually of middle age, 36 or over, pale, fairly well nourished, even slightly puffy, comes complaining of fatigue, loss of strength, and perhaps gastro-intestinal symptoms,—sometimes nervous symptoms. The blood examination suggested by his pallor and blanched mucous membranes, shows a plus one index, a low hemoglobin, evidence of profound blood destruction as exemplified by the megalocytes and poikilocytes and oligocythemia, with occasional nucleated forms, and a decrease in the white cells. This case is classical,—it is pernicious anemia; it has reached the stage where a positive diagnosis is easy and certain. It is in the earlier cases, in which the distinguishing features, the embryonal characteristics and high index have not appeared, which are confusing.

Differential Diagnosis. Because of the pale mucous membranes, pallor of the skin and weakness, all symptoms of any type of anemia, those conditions producing similar signs are first to be differentiated, and because of the age incidence, and gastro-intestinal symptoms,—carcinoma of the stomach stands first.

Both conditions produce an anemia, but the anemia of cancer is of the secondary type, with a low color index, and without the marked qualitative and embryonal characters. Both conditions usually have hypochlorhydria or achylia, both may at times give a positive Weber test in the stool. The x-ray may clear up the diagnosis by showing filling defects in the stomach, alteration of pyloric function, perversion of peristalsis, altered mobilty and six-hour residue in cancer. The cachexia, loss of weight and the course of cancer, leading to palpable tumor and enlarged liver clarifies the problem. Persistent small hemorrhages, such as occur from hemorrhoids, may be confusing until the cause of the bleeding is located. Carcinoma of the rectum may develop a high degree of cachexia, before symptoms sufficient to direct the patient's attention to the disease have developed, especially if situated well up toward the sigmoid, and may cause confusion until the examining finger or proctoscope clears up the difficulty.

The anemia accompanying syphilis, in the absence of cutaneous or bony signs must be thought of especially in the so-called malignant type. The two diseases are sometimes associated, and even the nervous manifestations are similar at times. The diagnosis here would hinge on the blood findings of a true primary anemia, in contra-distinction to a secondary type, history of infection and contrasting courses of the two diseases.

Parasitic diseases, notably hook worm infestation, may produce such a high grade of anemia as to closely simulate the primary anemia, with pallor and weakness, but is ruled out by the find-

ing of the ova in the stools; eosinophilia of 10 or 15 per cent is the rule in hook worm infection. Addison's disease, because of the asthenia and pigmentation, might have to be ruled out. The triad of asthenia, gastric disturbance and pigmentation, usually with a positive tuberculin test, and slight secondary, or absence of blood changes, differentiates this malady from pernicious anemia.

Cirrhosis of the liver, plumbism and chronic Bright's disease have symptoms in common with primary anemia, but are readily ruled out on clinical and laboratory evidence, with absence of the primary blood changes. Occasionally it happens that the first symptom which attracts the pernicious anemia patient's attention is some derangement of nerve function, due to cord changes, which very closely simulate tabes dorsalis. I have in mind a case, in a man of 42, in which the presenting symptoms was a numbness in the hands, with loss of stereognostic sense and girdle sensation about the arms. These symptoms persisted and in addition paresthetic symptoms, with unsteadiness of gait developed, making it clear that an involvement of the columns of Goll and Burdack had taken place. This case, however, had no lancinating pains, but did have an involvement of the crossed pyramidal tracts as evidenced by bilateral Babinskis, ankle clonus and a slight spasticity.

Negative Wassermann on the spinal fluid and blood, absence of globulins and a normal cell count on spinal fluid and absence of any cranial nerve involvement, with a positive blood picture of pernicious anemia, settled the diagnosis as a pernicious anemia.

Differential Diagnosis of Blood Conditions. I have touched on the differential points of secondary anemia in contrast with the primary types, but feel there are some other blood dyscrasias requiring differentiation:

Chlorosis occurs principally in young girls, and may show almost a normal blood, or an oligocythemia, with a low hemoglobin,—down to 40 or 45 per cent. Clinically, the two conditions, pernicious anemia and chlorosis, are very similar, with weakness, vertigo, fatigue, palpitation, but the chlorotic usually has a good color, with pearly sclerae, and absence of the pallor. A course of suitable iron preparation, diet and rest differentiates the latter by the therapeutic test.

The chronic form of myeloid leukemia, especialy the subleukemic type, in which there may be only a slight leucocytosis, instead of the usual 100,000 or more, is ruled out by the presence of the myelocyte in large numbers, as contrasted with pernicious anemia in which there is only an occasional one, not over one per cent, with leucopenia.

The presence of large numbers of nucleated reds in the VonJaksch anemia is the only point of resemblance. The disease shows a marked splenomegaly, and occurs in infants only.

Carcinomatosis of the *bone marrow,* has several points in common with pernicious anemia. The age incidence is the same, the blood changes, aniscytosis, megalocytosis, poikilocytosis are the same, and there may even be a plus one index,—a contsant flooding of the blood stream with erythroblasts and a leucoytosis of 20,000 or 25,000 with increase of the blood platelets, as contrasted with a decrease or absence of the platelets, a leucopenia, and only an occasional nucleated red cell, differentiates microscopicaly the two conditions, while an examination of the usual sites of the primary growth, namely the adrenal, breast, thyroid and prostate clear up the diagnosis clinically.

Hemolytic Icterus. The characteristic features of this condition, of which there are two types, the familial and acquired, are enlarged spleen, usually associated with an enlarged liver, chronic jaundice, with exascerbations, normal bile—colored stools and bile in the urine. It may be confused with pernicious anemia in the early stage, before the jaundice develops. The blood findings in this disease are those of an extensive secondary anemia. It is important to accurately diagnose hemolytic icterus, as removal of the spleen cures it, while it only palliates pernicious anemia.

Course and Prognosis. The average course would be about 12 to 18 months. Acute cases terminating fatally in a few weeks are reported, while Cabot reported a large series, in which ten patients had lasted seven years,—and he regarded 6 cases out of these 1,200 cases as cured. From an extensive perusal of the literature, I conclude that pernicious anemia falls prognostically in the same class as tubercular meningitis,—if the patient gets well he did not have the disease. Addisonian anemia is subject to remissions often of a year in duration. This is the ordinary type. The aplastic type gets progressively worse regard-

less of treatment, always with a poorer blood picture, until terminating fatally.

TREATMENT

Of the treatment of pernicious anemia, it may be stated at the outset that the cases seem to do well on most any treatment, from the usual I. Q. and S. tonic to splenectomy, that is for a time, or they seem to get along nicely without any treatment, under the ministrations of the chiropract or osteopath, also *pro tempore.*

The medicinal treatment is the same as for active lues, the arsenicals, especially neosalvarsan and sodium cacodylate. Two three grain injections of the cacoclylate daily for a week, alternating with ferric arsenate 1 cc daily, with six to nine decigrams of neosalvarsan, given every two weeks, will rapidly bring the red count up to 3,000,000 or 4,000,000, with marked improvement in symptoms,—even of the cord symptoms. Rest in bed for a period of several weeks, preferably in the open air, with as much nutritious food as the stomach will tolerate, is an important adjunct to treatment.

Blood Transfusions. In a moderately severe case, two or three injections of a pint of whole blood, a week apart, will produce a remarkable amelioration of symptoms. It is known that a red cell from a proper donor will live and function for a month or more in the recipient's blood stream; whether the benefit is obtained through adding additional functionating erythrocytes to take the place, in part, of the crippled, impoverished ones, or by producing an added stimulus to the hematopoietic organs, there is a greater production of new cells, is problematical. It would seem that both factors are at work. Splenectomy has been performed by many men.

In a series of 47 cases splenectomized at the Mayo clinic, with a six per cent operative mortality, 78 per cent of the series were dead in three years, with an average period of nineteen months of life following operation; five patients were alive and in good condition four years and six months after operation. Improvement in the anemia, apparently due to decrease of hemolytic activity lasts about six months. Exascerbations were more prone to occur from incidental diseases, like influenza, in those whose spleens had been removed. A more rapid and satisfactory response to transfusion was noted in this series. On the whole from this series of cases, the writer claimed a prolongation of life in one-fifth of the series.

Dr. Mayo says in substance, that splenectomy does not seem to be based on sound reasoning, that while it may bring about a temporary remission, it will not effect a cure. Probably some of the cases, so favorably reported on, were not pernicious anemia, but hemolytic icterus. It is worthy of trial in border line cases, but in view of the operative mortality, good reason must exist for supplanting transfusions with splenectomy.

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ANATOMY, PHYSIOLOGY, AND DISEASES OF THE CIRCULATORY SYSTEM, AND MANAGEMENT AND TREATMENT OF SUCH DISEASES*

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The circulatory system is composed of the heart, the arteries carrying pure blood toward all parts of the body, the capillaries, and the efferent vessels, or veins. The entire system is one intricate arrangement of tubes, with no macroscopic opening in any part. The heart is the main propelling force, and the vessels, both afferent and efferent, are largest near the heart, and dwindle to mere threadlike vessels, the capillaries.

The heart is a hollow muscular organ, enclosed in a fibroserous sac, composed of two layers, namely, the visceral layer, or epicardium, lying next to the organ, and the parietal, or outer layer. Ther are four chambers or cavities, two above, the auricles, and two below, the ventricles. There is an opening between the right and left sides of the heart during fetal life, the foramen ovale, but this aperture closes at birth, if conditions are normal, thus leaving the halves completely and permanently separated. The right heart receives the impure blood coming from the body tissues by way of the superior and inferior venae cavae, and the left heart receives the purified blood from the lungs through the pulmonary veins.

Between auricle and ventricle, on both sides of the heart, there are valves that permit the unobstructed flow of blood from above downward,

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and completely prevent any return flow. This arrangement is carried out throughout the entire circulatory system, the valves assuring a current in one direction only.

Due to a specially arranged reflex located in the heart muscle itself the contractions continue regularly when we sleep, the rate being slower than when awake. But the contractions of the muscles through which the blood vessels take their course, assisted by the valves referred to above, have a great deal to do with the proper maintenance of a good circulation.

The heart is about five inches or 125 m.m. long, three and one-half inches or 87 m.m. broad, and two and one-half inches or 62 m.m. antero-posteriorly. Its size is roughly estimated as being about the size of the closed fist, varying greatly at different ages and in different individuals, many conditions, accompanied by apparently good health, affecting the size of the heart. The heart is a peculiar type of striped muscle, especially adapted to continuous work and strain. This muscle tissue is continuous to some extent in all the vessels leading to and from the heart, and the well-being of the individual depends in a great measure upon the condition of these muscular fibres in the vessel walls.

The blood is sent out through the aorta to all parts of the body, then carried back through the capillaries to the veins, thence to the right auricle by way of the superior and inferior venae cavae, then to the right ventricle, then to the lungs by way of the pulmonary arteries to be purified: then by the pulmonary veins to the left auricle, thence to the left ventricle, this entire circle being repeated every twelve to twenty seconds during life.

The function of the circulation is to carry nourishment to the tissues, and to remove the end-products of metabolism from the system. Complete success in this attempt means health, and any deviation from it results in some pathologic condition.

The diseases of the circulatory system are so complex and so numerous that I shall mention only a few of the more common ailments we meet with and attempt to correctly diagnose. The entire list includes the various forms of paricarditis, endocarditis, incompetency, stenosis, hypertrophy, dilatation, myocarditis, degeneration, neuroses, and diseases of the arteries, chief among which are the aneurysms, and arteriosclerosis.

It is very seldom that any one of the above mentioned conditions is found until others in the group have been grafted on as a complication. For instance, a stenosis will soon produce incompetency, dilatation, hypertrophy, endocarditis, and almost any other condition common to the circulation if such condition is not relieved.

A great many cases of pericarditis, myocarditis, and endocarditis are never diagnosed for various reasons. In some cases the symptoms are mild, and the afflicted party does not report to a physician. Others report, but after a more or less superficial examination are given tonics, instructed to get more sleep and rest, and less food, and the condition improves to such a stage as to never cause further difficulty, or dissappears altogether.

Cases of pericarditis with effusion, if marked, usually cause enough discomfort to keep patient and physician busy until the difficulty is diagnosed and an effort made to correct the condition. It is often necessary to aspirate the serum or pus from these cases, and the prognosis in such events is rather unfavorable.

Aortic incompetency soon results in a considerable irregularity in the circulation. There is soon dilatation and hypertrophy of the left ventricle, too much blood is thrown into the arteries at each cardiac contracture, causing a strain on the arteries, often resulting in arteriosclerosis, followed sometimes by atheroma, aneurysm, or apoplexy. In time, if the condition is not corrected the pressure extends back to the left auricle, thence to the vena cava, all parts of the body become congested, back pressure is exerted on the pulmonary arteries due to an overloaded circulation in the lung, and soon the right heart is involved in a manner similar to the left. Kidney function is disturbed, and the liver is markedly enlarged due to passive congestion. Edema of the feet occurs, and occasionally general anasarca supervenes.

As long as the muscle retains its tonicity the patient may fare well, but when, due to the constant strain, the heart fails to compensate, all the symptoms gradually increase in severity, and the patient rapidly assumes a grave condition, with a very decidedly poor chance of any relief. The patient often complains of throbbing headache, vertigo, and tinnitus. A condition of gen-

eral arterial anemia exists, due to failure of a normal amount of blood being sent into the circulation with each heart contraction. The patient appears anemic, often has headaches, flashes of light before the eyes, and dizzy spells. Hot flushes and sweating, caused by flushing of the peripheral circulation often cause a diagnosis of tuberculosis to be made. Dizziness, if it does occur, is often very distressing, and is most marked upon arising from the recumbent to the erect position. Exertion may produce marked dyspnea, even early in the disease, the condition being due to an interference with the blood entering the heart from the lungs, producing a pulmonary congestion. Precordial oppression, cardiac palpitation, and a dull aching pain radiating to the shoulders, and thence down the arms, especialy the left, often occur as early and persistent symptoms. When compensation fails, the dyspnea and general venous stasis become markedly worse. Sudden death, as a result of involvement of the coronary arteries, is more common in this form of valvular disease than in all other forms combined.

Inspection shows the apex beat displaced downward and outward, visible in the sixth or seventh space, usually markedly heaving in character; the larger arteries near the heart throb forcibly; the pulse in this disease is known as the Corrigan, or water-hammer pulse; it is quick and full, but recedes abruptly.

Aortic stenosis has some of the same characteristic symptoms as aortic incompetency, but the apex beat is not so forceful, and edema is usually not marked.

A marked systolic thrill is common in the aortic region, heard at the base and transmitted to the vessels of the neck.

In mitral incompetency a systolic apical murmur is heard, and is conveyed to the left axilla, and may even be heard at the back, thus distinguishing the condition from aortic stenosis.

Mitral stenosis is characterized by a presystolic thrill at the apex, a murmur near the normal apex beat, localized, presystolic, and rough in character. The second pulmonic sound is accentuated.

In tricuspid incompetency the venous pulse is the most valuable symptom in making the diagnosis. This can often be detected in the veins of the neck, being more marked when the patient is in the recumbent position than when sitting or standing. Often, however, the pulsating liver is the most reliable means of recognizing this condition. While we are referring to this type of valvular disease I wish to report the following case:

Patient about fifty years of age, male. Farmer. I was called to see him to relieve a condition the patient called asthma. I found him sitting up in bed, suffering a great deal from dyspnea. Examination showed a wide aorta, apex in sixth space below and external to the nipple, indicating a severe myocarditis. Heart very incompetent, but regular at 110 while patient was quiet. The pulse was very small in volume. Blood pressure was 150 diastolic, 205 systolic; pulse pressure of 55. The entire venous system and liver were engorged. When lying down the jugulars were very large and full, but cleared up and were empty when the patient was in the sitting posture. There was marked pulsation in the jugulars due to incompetent tricuspid opening. There is history of colics in his early twenties for three or four years. These were probably of gall bladder origin as he has soreness in that region now, and has had some few attacks lately. He had some very doubtful looking teeth. He gives a history of a large painless carbuncle on his neck a year ago, lasting two months with a typical discharge, and without general sepsis or loss of time from work. This was probably a gumma, as boils and carbuncles are painful. Potassium iodide and mercury, alternated with tincture digitalis, started him on the road to improvement, but he had many relapses of a severe nature, followed by marked changes for the better. During one of these periods the family thought he was on a sure road to recovery, when without any warning he rose to the sitting posture and fell back dead. This case was probably luetic, the heart being the most affected organ.

Tricuspid stenosis is rare, and is seldom an uncomplicated condition. Venous stasis, dropsy and especially hydrothorax are common in this type of valvular disease.

Pulmonary incompetency is also rare, and usually difficult of diagnosis.

Pulmonary stenosis results in cyanosis and distention of the systemic veins. A systolic thrill may be felt at times over the base. A systolic murmur, most often heard in the third left space near the sternum, is transmitted a short distance upward and to the left.

All the above mentioned types of cases require careful study and repeated examinations if the physician would give his patient the best results. A great deal of weight is given by some examiners to the finding of a murmur or leakage of the heart as the layman often terms the condition. Too hasty a prognosis must not be given.

Osler says that "with the apex-beat in the normal situation and regular in rhythm, the auscultatory phenomena may be practically disregarded."

The prognosis in these cases varies considerably with each individual case. The duration and severity of the condition, the mode of living followed and the general interest assumed by the patient are all very important factors to be considered.

Hypertrophy and dilatation of the heart are conditions that often complicate the conditions we have just been considering.

Regulation of diet, rest, and resort to the usual drugs adapted to these conditions will give slow and sure results in the favorable cases, but will result in more or less disappointment in complicated cases or those of too long duration. In a great majority of these cases the prognosis is rather unfavorable. The one unfortunate feature of treating any of these cases is that as soon as a patient gets marked relief he begins to relax in his efforts and improvement stops, and in many cases a relapse occurs, usually worse than the original trouble, and the prognosis is very unfavorable as to ultimate recovery.

The neuroses, palpitation, tachycardia, bradycardia arrhythmia, Stokes-Adams disease, and angina pectoris are often reported to the physician for treatment, as most of these condtions cause considerable pain or discomfort directly in the cardiac region. Of these diseases we are called upon to treat a greater percentage of cases of angina than any other because the pain is severe, and the patient and relatives become alarmed. There are so many variations in degree that the prognosis is very uncertain. Some forms, especialy those accompanied by sclerosis of the coronary arteries, often prove suddenly fatal. The treatment consists of absolute rest, restriction of diet, inhalations of amyl nitrite, and the use of nitroglycerin, morphin, bromides, and other sedatives. Patients having one attack of this kind should be very cautious in their mode of living for some time to avoid recurrences. Cases have been known without recurrence, which is, of course, the most desirable termination.

Arterio-sclerosis is met with rather frequently. This disease is usually spoken of by the laity as hardening of the arteries, and is looked upon as a very serious malady by many.

There is every graduation from the mildest type to the one that produces death almost instantly by apoplexy. It is the fact that a fatal termination is possible that causes the patient to be concerned about the disease. Pain and the possibility of sudden death are the two things that cause our patients the most uneasiness. Many chronic ailments that are really eating at the vital elements of the body are often neglected because there is no suffering connected with the condition, and the patient does not feel that serious harm can come from it.

Aneurysm is a rare condition, and probably often not diagnosed when it does exist. Its treatment consists mainly in an attempt to produce coagulation in the sac. In some cases surgical or mechanical measures are resorted to, with more or less doubtful results.

The management of cases of disease of the circulatory system resolves itself into a rather complicated affair in many cases, as the diagnosis is often made late in the disease, due to failure of the patient to report to his physician for early examination. The first thing to be considered is rest. This should be absolute rest, in bed. It is often difficult to get much co-operation from the patient in this matter after the first few signs of improvement appear. The recumbent position should be maintained long enough to be sure of results. Better too much time spent in bed than not enough. The time varies in each instance and careful examination, repeated often, is the best guide as to how long these patients should rest.

Diet is another phase of treatment that must be considered in some cases. In most instances the enforced rest causes the system to be easily satisfied as far as quantity is concerned. It is only necessary for the attendant to select a bland diet of easily digestible foods. If the patient still retains an unusual appetite it is necessary to regulate quantity and quality of foods. The main idea is to give the patient's digestive system as little to do as is consistent with a proper nourishment of the tissues, thus leaving any excess energy that may be present to help in repairing the defects of the weakened circulatory system. Some cases come to us early, are rather

difficult to handle as far as rest and diet are concerned, and get themselves and some physician into a real task later.

Different types of these conditions require varied means of medication and mechanical treatment.

If the disease is only a complication, as of rheumatism, scarlet fever, syphilis or other infectious conditions, the treatment of both disease and complication must go hand in hand.

In any case in which the heart is affected, it is often necessary to resort to some form of stimulants to keep up the muscle tone until improvement can be secured. The most common among the preparations employed are digitalis in some form, strychnia, strophanthus, cactus, the ammonium salts, opium in small doses, and amyl nitrite. The drug fitting the case is selected, the dose regulated according to conditions present and changes or none made from time to time as suggested by the progress of the case.

Fat-free tincture of digitalis in doses from five to fifteen minims three or four times daily is a common favorite in most forms of heart disturbance. It raises blood pressure but this is often considered of less importance than the stimulating effect imparted to the heart muscle. This drug must be used cautiously. The heart rate and blood pressure should be watched carefully. If there is a tendency to a continuous rise in pressure, or to a gradual slowing of the pulse rate, the drug must be withdrawn for a time. A patient taking digitalis, if resting in bed, should be cautioned against sudden exertion, such as changing to a sitting posture, as these patients often die suddenly with the heart in systole, the result of chronic digitalis stimulation, aggravated by a sudden acute muscular strain. If digitalis is being used, and pain is present in the cardiac region, it is well enough to continue as long as the pain is not aggravated by the medicine. If it is made worse it becomes necessary to reduce the dosage, or discontinue the drug. Other indications for its discontinuation are nausea and vomiting, thready and irregular pulse, and diminution in the amount of urine excreted.

If arterio-sclerosis be present nitroglycerin should be added to the prescription to counteract the effect of the digitalis on the muscular walls of the vessels.

DIABETES MELLITUS*

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Recent contributions to the literature of diabetes mellitus, although varied and often apparently conflicting, have given the subject a definiteness previously lacking. For this reason it would seem to be worth while to sum up some of its more important phases. In doing this the recent literature has been freely quoted, particularly the writings of Joslin,[1] Allen[2] and Woodyatt.[3]

ETIOLOGY OF DIABETES

The direct cause of diabetes is infection and inflammation. Allen has set up the dictum "without pancreatitis, no diabetes." Woodyatt regards the so-called diabetic predispositions as simply inherited susceptibilities to pancreatic infections.[4] There are three chief forms of injury: 1, obstructed biliary or pancreatic secretion, the immediate harmful agent being chemical, but the cause back of it usually bacterial; 2, bacterial inflammation; 3, absorption of soluble toxins. The problem of acute and subacute pancreatitis is still far from being solved. Concerning the occurrence of low grade and slight degrees of pancreatic inflammation almost nothing definite is known. The careful routine examination of autopsy material at various hospitals has shown pancreatitis in about three per cent of the cases. It seems probable that with adequate diagnostic methods a new domain of pancreatitis will be developed from indigestion, dyspepsia, gastritis, biliousness, autointoxication, catarrhal jaundice and other indefinite abdominal troubles and vague impairments of health.

These inflammatory changes may actually initiate diabetes, but as a rule produce only functional deterioration which after a variable period of time breaks down under the metabolic strain with the appearance of diabetic manifestations. The sequence of events is probably as follows: Inflammatory changes are initiated in the pancreas with actual or functional deterioration of the island cells. These cells respond with an actual or attempted increase of secretory activity for a longer or shorter time while appearing morphologically normal. At length secretion is discharged more rapidly than it can be formed, the normal fine granulations become more and

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more sparse and are replaced by hydropic vacuoles. In the strictest sense this hydropic vaculation is not an expression of diabetes but of cellular dissolution due to diabetes. Finally nuclear degeneration and complete disintegration of the cells result. In the very great majority of cases the factor of safety in the pancreas is sufficient to prevent the development of diabetes. In the other cases there is no evidence that these primary inflammatory lesions are progressive in character. In no case has it been shown that all the insular tissue has been destroyed. The subsequent welfare of the patient, therefore, is simply a question of whether the remaining islands are spared or destroyed by diet. In the main the inability to draw a sharp pathological line between diabetes and non-diabetes merely expresses the fact that no such line exists. There are all gradations between normal and diabetic with and without demonstrable impairment of food assimilation. With allowance for functional variations a person is diabetic in proportion as the islands of Langerhans are lacking. However, the characteristic active symptoms of diabetes may be absent with anorexia, impaired food absorption, emaciation or cachexia when the pancreatic destruction would certainly bring on diabetes if the patient were otherwise healthy. This is probably the explanation of the usual lack of diabetic symptoms in cases of acute pancreatitis and pancreatic cancer.

The Nature of the Diabetic Anomaly. One single specific defect characterizes diabetes. This consists in an inability on the part of the body to utilize as much glucose as may be utilized by the normal body when the supply exceeds certain limits. Whereas in normal individuals the more glucose is given the more is utilized, the reverse is true in diabetes when the amount exceeds certain limits; that is, the more glucose is given the less is utilized. In non-diabetic individuals the limit to the utilization of glucose is only apparent, in diabetics it is real. However, the difference is only a quantitative one for the diabetic appears to be capable of utilizing a limited amount of glucose as well as the normal individual. The cause of this anomaly is a deficiency of the endocrine function of the pancreas. The internal secretion of the pancreas, so far as we know it at all, is a single highly selective function having to do with the utilization of glucose and nothing else. Presumably it performs this function by secreting a substance which combines with or acts upon glucose rendering it available for oxidation. Facts indicate that the gland is stimulated by glucose to provide for the disposition of glucose. Accordingly it is necessary to conclude that the only way to lessen its work is to lessen the amount of glucose that enters the metabolism. That a weakened pancreas in the presence of a sufficient supply of glucose might be stimulated into a state of fatigue and decreased function, and that a sufficient diminution of the glucose supply might then lessen the stimulation, place the organ in a state of comparative rest, and permit it to recuperate up to a certain limit is also quite conceivable, and affords a logical explanation for many facts.[3] Every evidence points to the origin of the internal secretion of the pancreas in the pancreatic islands. In diabetes these cells regularly show pathologic changes. These consist first in the disappearance of the normal fine granulations, then hydropic vacuolation, and finally nuclear degeneration and complete disintegration of the cells. The classical feeding experiments of Allen on partially depancreatized dogs have shown that these changes can be produced and controlled by diet. For this reason the term exhaustion has been used as synonymous with vacuolation. The process represents a clear cut example of the anatomic break down of an endocrine organ by functional overstrain. Treatment of diabetes by diet, therefore, is not mere palliation of a sympton but a genuine means of checking the progress of a definite pathological change.

The anomaly of metabolism ordinarily termed acidosis in which abnormal amounts of acetone, aceto-acetic and β-hydroxybutyric acids appear in the tissues, blood and urine is not due directly to any impairment of the internal secretion of the pancreas. It is simply the result of the incomplete oxidation of certain fatty acids in the absence of sufficient oxidizing glucose. It is not peculiar to diabetes or constantly associated with it. It occurs in other diseases. It can be made to appear in normal individuals by starvation or a diet containing too low a proportion of carbohydrate or too high a proportion of fat, and when this is done it can be made to disappear again simply by the addition of more carbohydrate in the diet. In other words, the quantity of oxidizable glucose available fixes an upper limit to the amount of ketogenic fatty acid that can be

completely oxidized at the same time. The absolute magnitude of this ratio has not been determined but it lies in the neighborhood of 1.5 to 1.[3]

Dangers of the Diabetic State. It is an established fact that when diabetes is controlled, that is, when the diabetic is on a diet which he can completely utilize, his metabolism and general resistance are normal, and he has lost only in strength in proportion to the restrictions necessary in his diet. This is not true during the diabetic state, by which is meant the presence of hyperglycemia and glycosuria. The presence of this state, even though it may persist for long periods with practically no symptoms, carries with it a constant menace. It is almost to be regretted that it does not carry with it some acute symptom such as pain to serve as a danger signal. If a person overtaxes a weak stomach the resulting distress punishes the error and forces him to desist, but if he overtaxes a weak pancreas, nothing but intelligence can show him what is wrong.

The chief dangers of the diabetic state are:

1. Sooner or later it actually reduces the individual's tolerance or ability to utilize food. While it has never been shown that there is a spontaneous tendency for the diabetic anomaly to become more severe, it can be shown upon any diabetic that overfeeding produces first pancreatic fatigue, then exhaustion and finally actual loss of power. These changes may be rapid or exceedingly gradual, but are always present. When an individual who has shown hyperglycemia and glycosuria for years comes to a state where the pancreatic function is too low to support life, it is not due to a chronic progressive tendency of the disease but to chronic inefficiency of treatment. It is probable that there is no inherently hopeless severity even in the diabetes of the very young but merely a greater sensitiveness to injurious influences, particularly those of diet.

2. It is the first step towards acidosis and coma. Any patient with an uncontrolled diabetes, even though slight, may be thrown into coma by an indiscretion in diet, overexertion, fatigue, worry, shock, infection or accident. In fact, this is what usually happens. Coma is still responsible for the great majority of deaths in diabetes and almost all of these are preventable. Except in cases of complete diabetes, acidosis and coma are simply complications and do not represent the logical end of the disease.

3. It lowers the body's resistance against acute and chronic infection. Head colds, tonsillitis, bronchitis, pneumonia, tuberculosis, furuncles, carbuncles, infected cuts or scratches, etc., are common in uncontrolled diabetes and are unusually severe and often terminate fatally, usually with coma. In controlled diabetes they are scarcely if at all more frequent or severe than in normal individuals.

4. It increases the individual's susceptibility to arterio-sclerosis. The arterio-sclerosis of diabetes is of the senile or degenerative type and is no different from the arterio-sclerosis of non-diabetic individuals. It is regarded by some almost as much as a cause as a result in the diabetes of the aged. In other cases its more frequent and earlier appearance and more rapid development are only a part of the general decrease in the body's power of maintaining normal function and repairing wear and tear which accompanies the diabeteic state. The same remarks apply to the retinitis of diabetes,[5] which is nothing more than the retinitis of cardio-vascular renal disease modified in its appearance and stage of occurrence by the metabolic disturbances associated with the diabetes.

5. It increases the susceptibility of older individuals to gangrene. The reason diabetes develop gangrene more frequently than normal individuals is not because the circulatory changes are different or greater, but because their diabetic state has lessened the power of their tissues to withstand the ischemia resulting from the diminished circulation and of resisting infection.[6] That is, the same diminution in circulation which produces no, negligible or few changes in a non-diabetic individual results in gangrene in the uncontrolled diabetic.

6. It increases susceptibility to cataract, neuritis, asthenia out of proportion to loss in weight, and the host of other disorders listed in classical text-books. It will be noted that all but one of the dangers of the diabetic state which have been mentioned are in reality complications and not part of the diabetes itself. Food in excess of tolerance lowers resistance by poisoning the organism. Allen has said that with due regard to prepositions it may be said that few die from diabetes, many die with diabetes.

The Food Supply.[3] Much of the confusion in the treatment of diabetes arises from the almost universal custom of thinking of the food supply as simply so much carbohydrate, protein and fat,

and so many calories without further analysis. Carbohydrate, protein and fat are three separate and distinct substances, no one of which can be expressed quantitatively in terms of another. If we speak of food supplies or diets as made up of so much carbohydrate, so much protein and so much fat we simply name them in terms of three variables. As a matter of fact, carbohydrate, protein and fat are not in reality the substances that present themselves in the body for the final oxidation that results in the liberation of energy. They must be resolved by the processes of digestion and intermediary metabolism into simpler substances before they can be burned in the tissues. It is not the starch in the bowel nor the glycogen in the liver that taxes the endocrine function of the pancreas, but the glucose into which these carbohydrates are resolved. The carbohydrates of the diet and tissues that do not already exist in the form of glucose are converted into it prior to oxidation. This occurs almost gram for gram so that we may say that 100 grams of utilizable carbohydrate in the diet, if digested and absorbed, will introduce into the metabolism 100 grams of glucose. The protein of the diet ceases to be protein and becomes a mixture of the amino-acids before it can be absorbed from the bowel. These amino-acids insofar as they are catabolized are deaminized and presumably at the same time oxidized to yield oxy or hydroxy acids. Part of these are converted into and oxidizer as glucose and part as products which are equivalent to the higher fatty acids in that they are capable of yielding β-hydroxy and aceto-acetic acids, while a third small portion is destroyed in as yet unknown ways. Thus analyses have shown that 100 grams of mixed protein when completely absorbed and catabolized are capable of introducing into the metabolism 58 grams of glucose and approximately 46 grams of fatty acid. Neutral fats, while they may be absorbed in part as such, and may be deposited in the tissues as such, must be saponified into glycerol and fatty acids before they can be oxidized and used as sources of energy. Complete saponification yields about ten parts by weight of glycerol and ninety parts by weight of higher fatty acids. Glycerol is capable of conversion into glucose almost gram for gram. So we may say for clinical purposes that 100 grams of mixed fat in the diet, if completely absorbed and catabolized, will introduce into the metabolism about 10 grams of glucose and 90 grams of higher fatty acid. Thus, as a matter of fact, carbohydrate, protein and fat are not the actual foodstuffs we are dealing with when it comes to the final metabolic processes, for all the foods of the diet, except a small fraction of the protein, resolve themselves in the body into two things, glucose on the one hand and higher fatty acid (or acetone forming equivalents) on the other.

It follows from the foregoing that the rationale of dietetic management of diabetes is to bring the quantity of glucose entering the metabolism from all sources below the quantity that can be utilized, and to adjust the quantity of fatty acids in relationship to the quantity of glucose so that complete oxidation will result. If and when, under these conditions of relative rest for the pancreas, the glucose using function improves, the food supply may be gradually increased insofar as this can be done without disturbing these relations.

THE TREATMENT OF DIABETES

While the riddle of diabetes is still far from being solved, sufficient advancement has been made to render its treatment scientific rather than empirical. In 1917 Joslin[1] definitely outlined the treatment of diabetes as follows: 1, the prevention of acidosis; 2, the attainment of a substantial carbohydrate balance; 3, the avoidance of inanition; 4, simplification of treatment, the better education of the patient, and the maintenance of closer cooperation with the physician.

Acidosis is naturally the bugbear of doctor and patient, as it is the factor which kills. An uncomplicated glycosuria or hyperglycemia is never fatal. It is not only more rational but it is easier to prevent acidosis than to treat it, and certainly patients presenting themselves without acidosis must not be made worse or have their lives imperiled by treatment. For this reason, while it is not always necessary, it is probably always wiser that the first change in the diet should be the omission of the fat. Subsequently the protein should be omitted, and then the carbohydrate reduced until the patient is either sugar free or fasting. If the patient presents himself with acidosis the same procedure may usually be carried out. However, unless there has been recent radical changes in the diet, and probably even then, it is best to begin fasting at once. In these cases the blood sugar is already un-

desirably high and little sugar can be metabolized. Anything, then, that aggravates the diabetes and delays the clearing up of the glycosuria probably also acts injuriously upon the acidosis. The only known rule up to the present is, if a patient develops acidosis on feeding, to fast him, and if he develops acidosis on fasting, to feed him. These remarks concern the dietetic management of acidosis. It is, of course, understood that the patient showing any but very slight degrees of acid poisoning will be put to bed, kept warm, furnished with adequate nursing care, have the bowels moved by one or more enemas (cathartics are to be avoided for fear of upsetting the stomach or bowels with consequent vomiting and diarrhea) and be given at least a liter of liquid every six hours. The question of alkali therapy in diabetic acidosis is not entirely settled. Joslin is definitely against it. Allen, Fitz and Stillman certainly do not encourage it. Cabot states that its only use is to rally the patient and clear his consciousness when the arrival of relatives has been delayed. Christian and Mosenthal, on the other hand, still employ it. Theoretically, of course, the diabetic patient needs alkali. The therapeutic point of the whole matter, however, is that attempts to treat acidosis by neutralization of its products is illusory and often dangerous even as a temporary measure, and will always lead to failure in the end. Successful treatment can only consist in stopping the abnormal acid production, which is the essential disturbance. Under all circumstances it must be understood that control of the metabolism by fasting or food is the essential means of treatment, and that failure in this attempt must end fatally in spite of any dosage of alkali. It has been repeatedly shown that although the patient's blood alkali can be kept at a fully normal level he will die in deep coma nevertheless. The dangers of alkali administration consist in: the liberation of combined, quiescent and harmless acid bodies from the tissues; depletion of the body chlorides which are distinctly useful; irritation of the stomach or bowels with resulting vomiting or diarrhea and consequent inability to take or retain the fluids which are so necessary; the production of abnormal diuresis necessary to remove the acid salts; depression of the kidney function by the excretion of so much acid, the kidneys may be actually overwhelmed and cease to act; and actual depletion of the body's bases by the excretion of increased amounts of acids. Finally the constant use of alkali seems to promote the constant excretion of acid bodies.

After the urine has been rendered sugar free for twenty-four hours by reduction of the diet or fasting, the next step is to determine the carbohydrate tolerance. This is done by giving five or ten grams of carbohydrate, usually in the form of five or ten per cent vegetables, and continuing to add five or ten or more grams each day, depending upon the severity of the case, until sugar reappears. After the urine has been sugar free for two days, protein is usually added and rapidly increased until the patient is receiving one gram per kilogram of body weight. There are very few patients who will not bear almost at the onset one gram of protein per kilogram. With the protein the patient receives some fat but by employing egg white, fish and chicken the fats are kept as low as possible in order to increase the carbohydrate tolerance. It seems as if it were worth while to sacrifice almost anything to secure a tolerance to carbohydrate; with this once established, strength and weight follow as a matter of course.

The return of sugar demands fasting for twenty-four hours or until sugar free. Absence of food for twenty-four hours will almost invariably free the urine if the presence of glucose is promptly detected, hence the necessity for the patient to examine his twenty-four urine daily. Following this accessory fast day the previous diet is gradually resumed again, adding fat last and slowly. Great care should be exercised, more indeed than has been often taken, not to break down the tolerance a second time. Patients often get into trouble by their failure to energetically grapple with the reappearance of sugar. One day of fasting will accomplish more than many days of a moderately low diet. It is a mistake for any but the most highly trained patients to attempt to meet such a situation without medical advice. Subsequently, even though sugar does not appear in the urine, it is desirable upon one day each week to rest the function of assimilation by either a complete or partial fast day. Joslin[7] suggests the following rule: Whenever the carbohydrate tolerance is less than 20 grams of carbo-

hydrate, fasting should be practiced one day in seven; when the tolerance is over 20 grams of carbohydrate, cut the diet in half one day each week. The advantage of this procedure lies not only in the rest it gives the function of assimilation, but also, to a considerable extent, in the fact that the patient's attention is sharply called to his disease one day in seven, with the recollection of his original condition and the necessity of avoiding the difficulties following the reappearance of sugar.

Optimal Diets. After the urine has been rendered sugar and acid free and the food tolerance estimated, it is desirable to outline what Woodyatt has termed the optimal diet. Briefly this consists in: 1, enough protein to maintain nitrogen equilibrium; 2, as much glucose as the functional insufficiency of the pancreas will permit; 3, as much fat as can be oxidized without the appearance of ketone bodies in the urine or other signs of acidosis.

Of glucose, protein and fat, protein is the only one which can be considered an indispensable element. Glucose and fat may heat and run the human engine but protein is the substance of which the engine is made. Any diet, therefore, which fails to provide for the replacement of nitrogen must result disastrously in the long run. An individual is said to be in nitrogen balance when the food supplies at least enough nitrogen to make good the losses due to wear and tear on the protein tissues. As a result of previous experiments this can now be approximated closely enough for clinical purposes by the relation between the body weight and the protein intake. Indeed these calculations do not need to be made too closely as the weight of the individual may be materially altered by undetermined variations in the water, fat, salt and mineral content of the body, which, of course, do not materially affect its nitrogen requirements. In general, the Chittenden standard of one gram of protein per kilogram of body weight is considered sufficient. However, this matter can not be considered as definitely settled. Children need considerably more than adults. Joslin states that it is often advisable to give 1.5 grams, but remarks that it is surprising how few of his patients care to take that much. Newburg and Marsh found two-thirds of a gram sufficient to maintain nitrogen equilibrium in some of their patients. Finally it must never be forgotten that fifty-eight per cent. of the protein is utilized in the body as glucose. This undoubtedly accounts for the frequent recurrence of glycosuria on many of the high protein diets.

The first estimation of the carbohydrate tolerance, following as it usually does a more or less rigid reduction in the total diet, is often erroneously high. That is, it represents more carbohydrate than the patient can utilize when given continuously. For this reason, and because it has been repeatedly shown that, except in cases under the most careful supervision, the patient invariably gets slightly more food than the estimate shows, it is best, at least during the early stages of treatment, to allow only about two-thirds of the calculated tolerance, depending upon the severity of the case. In severe cases, and in any case showing inanition, where every possible calorie must be given in order to maintain strength, such a reduction of course is not desirable. On the other hand, the carbohydrate should not be kept too low, as it not only deprives the patient of the satisfaction of a more liberal diet, but may, if continued for too long a period, actually result in a diminished power of utilization through lack of training of those functions concerned in its metabolism. Naturally the method adopted will vary somewhat with each patient. In estimating the amount of carbohydrate in the diet it must also be remembered that the catabolism of 100 grams of protein liberates 58 grams of glucose, and the catabolism of 100 grams of fat yields about 10 grams of glucose. These considerations are of extreme importance in cases in which the carbohydrate tolerance has been determined separately. In cases in which the tolerance has been determined in the presence of protein and fat the rearrangements necessary, of course, are not so great.

Body fat constitutes an important source of reserve energy, and is important as a supporting structure, and in the structural make-up of nerves and other tissues. However, fat as a food can not be considered indispensable to the human body since, as a source of energy, it can perform few functions that glucose can not perform as well or better, and with less tax on the metabolic processes. Moreover, fat can not be utilized adequately as a source of energy except when its oxidation is accompanied by the oxidation of glucose. In other words, fat burns in the flame of glucose. Glucose is the oxidizing agent and faulty oxidation results in ketonuria. On the

basis of experiments, and on chemieal and clinical observations, Woodyatt advances the hypothesis that the ratio of the higher fatty acids to glucose in the diabetic diet should be as 1.5 is to 1 if acidosis is to be avoided. The practical application of this hypothesis would mean that a diabetic obtaining and utilizing 100 grams of glucose from any and all sources should be able to oxidize completely 150 grams of higher fatty acids, an amount obtainable from 170 grams of fat. Although diets containing higher ratios have frequently been employed successfully, particularly those recently used by Newburg and Marsh, at present Woodyatt's calculations seem to be a conservative appraisal of the metabolic processes involved in the oxidation of ketogenic acids. These facts should be kept in mind, although the close computation of such diets is unnecessary except in cases so severe that every possible calorie must be allowed.

Endogenous Food Supply. The method just outlined is largely that developed by Allen and Joslin and is undoubtedly more logical and less emperical and has yielded better results than any we have had heretofore. However, Woodyatt[3] has recently emphasized some very important facts in connection with both diet restriction and fasting which demand thoughtful consideration. He points out that when a man fasts he does not cease to produce heat. Normal men on a fast liberate at least 15 calories per kilogram of body weight when quiet, and on light exertion this may be increased to 25 or 30 calories per kilogram. Thus an ordinary individual weighing 50 kilograms will during fast produce 12-1500 calories per day, and in doing so actually mobilize and burn in the neighborhood of 75 grams of protein and 125 grams of fat and a little carbohydrate from glycogen. These well-known facts simply emphasize the magnitude of the food supply from the tissues in fasting. Lusk[8] has further shown that: when there is much fat present little protein is consumed; when there is little fat much protein is burned; and when there is no fat protein alone yields the energy of life. But as long as there is life something burns. Now if the diabetic patient reacts during a fast in the same way a non-diabetic individual does, and if he produces 1200 to 1500 calories, and in so doing burns 100 to 125 grams of fat, the ingestion of an equal amount of fat should leave his metabolism in the same state as before. The supply of fat would come at one time from the tissues, at another time from the diet, but the quantity thrown into metabolism and presenting itself for disposition would be the same in both cases. The same statement holds true to some extent for protein. Thus differences in the catabolism of a man when receiving no diet and when receiving a diet of 1500 calories may be slight, for as the diet falls the endogenous food supply rises to take its place, and vice versa. The lower the diet the less its significance in calculating the food supply from all sources. If these premises are sound why should we ever practice complete fasting in diabetes? Why, particularly in diabetes associated with undernutrition, for the purpose of desugarization should the patient be compelled to draw from his tissues the fat that he might draw from his diet, especially if in drawing from his tissues he lowers his fat reserve to the extent that he increases his protein losses? The striking results that have been obtained by Newburg and Marsh[9] with fat replacement diets bear significantly on this point. These workers completely ignored the extent of the glycosuria and acidosis of their patients at entrance, and routinely placed them on a diet containing from 900 to 1000 calories, of which about 90 grams were fat, 10 grams protein and 14 grams carbohydrate. In all their 73 cases both the glycosuria and acidosis were rather rapidly controlled, despite the large amounts of fat contained in the diet. After the patients had been sugar free for one to two weeks this diet was gradually increased until it contained enough protein to maintain nitrogen balance and sufficient calories to maintain weight and strength. However, the fat was always kept proportionately high, apparently without either lessening the carbohydrate tolerance or inducing the dreaded acidosis.

Defense of Fasting and Undernutrition. Undernutrition and fasting have been and are being criticised and attacked by many. Acknowledgment is always to be made of the shortcomings of the treatment itself, inherent in its negative nature as a mere rest of a weak function without any positive element of cure. However, at present this criticism applies to any and all methods of treatment. It must also be acknowledged that at first the treatment was often carried too far, and perhaps in some cases is still being carried too far. One should never forget that there is a

human element with which we have to deal.[10] One is not practicing medicine in a laboratory. It is much safer to teach diabetics to eat too little rather than too much. There are few, if any, diabetics starving themselves to death from not eating, but there are many who would starve themselves to death by eating, did they not escape actual death by starvation by dying prematurely in coma. It may be stated as a general rule, to which probably the only exception is the temporary diabetic glycosuria developing in the course of an acute infection, that a gain in weight means a loss in tolerance. It is not the quantity of food that should be metabolized but the quantity that can be metabolized that is important. On any plan of overfeeding what develops is the diabetes and not the patient. Practically all cases show a relatively high tolerance at first. Overfeeding destroys this tolerance and with it the chance for improvement.

The principle of fasting for the purpose of desugarization is far too good to renounce. It is simple, rapidly effective and, if carefully supervised, almost devoid of danger. It may be compared to our two most powerful drugs, digitalis and morphin, both of which are poisons if the therapeutic dose is exceeded, yet because they are poisons no one thinks of discontinuing their use. While fasting is probably equivalent to a protein-fat diet, it must be remembered that in uncontrolled diabetes the blood sugar is already abnormally high and more glucose is available than can be utilized. It should not, of course, be continued too long. In markedly undernourished or emaciated individuals it is equivalent to an almost pure protein diet, and in these cases is least efficacious and most often dangerous. Its use par excellence is for the return of glycosuria during treatment. In addition there are four very practical advantages in the employment of fasting. First, the diabetic patient must be early impressed with the fact that he must become and remain sugar free. Fasting is the most rapid means of accomplishing this and avoids the disappointment attending the persistence of glycosuria. Second, the limited and simple diet prescribed following the fast is one the patient can easily understand. Thus almost at once he can be taught by easy stages to compute his diet and confusion and discouragement at the lessons involved avoided. Third, its definiteness and simplicity is such that the patient can employ it himself upon the reappearance of sugar. He can hardly be expected to use it unless its feasibility has been demonstrated to him by previous employment. Fourth, by its use the responsibility for treatment is placed directly upon the patient and renders the chances of his following directions far more probable.

Education of the Patient. Rendering the urine sugar and acid free, determining the food tolerance, and prescribing a so-called optimal diet is really only the first and easiest step in the management of diabetes. The first effects of treatment are usually so magical that they scarcely appear attributable to the simple methods employed. However, the responsibility for maintaining this favorable state must rest in a large measure on the patient himself. He must learn what diet is best for him and constantly control his condition by examination of his urine. There is no disease in which an understanding of the methods of treatment avails so much. The patient who knows the most, other things being equal, can live the longest. The diabetic patient should be made to understand at the outset that he is taking a course in diabetes. For successful completion of this course he should at least be able: 1, to test his urine for sugar; 2, to record a summary of his diet; 3, to calculate the amount of carbohydrate, protein and fat it contains; 4, to state his diet on his weekly fast day; 5, to describe what he is to do if sugar reappears in the urine. To acquire this requisite knowledge requires diligent study, to apply it requires character, patience and self-control, but the price offered is worth while for it is life itself.[7]

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INDUSTRIAL EYE INJURIES*

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Paper No. 1.

The substance of this paper should be considered under two headlines, viz.:

First, Prevention.
Second, Cure.

Let us first endeavor to ascertain what can be accomplished in the way of *"Prevention"* of ocular injuries in industrial occupations.

First, one of the most important barriers to eye damage is a thorough ocular examination by an oculist before an applicant is given employment. It is not sufficient to have such examinations made by a general practitioner, a nurse or a layman, who merely tests vision with test types and makes a general or cursory survey of the eyes. Most important pathological conditions are only detectable by an experienced observer. Slight strabismus, minute corneal, vitreous and lenticular opacities, hidden iritic adhesions, fundal changes, abnormal visual fields, refractive errors, etc., can only be detected by the experienced oculist—and it is these very conditions that are important to diagnose. It is essential to be cognizant of such abnormalities, and to possess *records* of such findings. It may be very altruistic to assume the honesty of all men, but we—who are disillusionized know that all men are not honest. My own experience leads me to believe that only a minority of men are honest when it comes to seeking financial remuneration for physical damages from rich corporations. Indeed, I am not perfectly sure I would not be dishonest myself under such circumstances. I suspect I would enlarge upon all possible physical ailments, feeling that after all I had worked hard for the company, and had been damaged while in its employ, that there was no telling what might happen as a result of my accident, that I had a family to support, that the company was rich, while I, who did their dirty work was poor, and, after all, why should I not get any money I could, without leaving behind any very strong conviction of real dishonesty. If, therefore, I, a reasonably honest, and I trust a reasonably intelligent man, could under stress of circumstances dally with the truth, is it not reasonable to assume that others, less endowed than I, would do the same? Thus it happens that industrial surgeons (particularly) are constantly brought in contact with more or less spurious demands for financial compensation for bodily damage, and one definite means of defeating such spurious claims is to have accurate physical records of all applicants for work, before work is assigned.

Not infrequently I see patients who have sustained some trifling eye accident, who at the same time have a senile cataract. Blindness as a result of the accident is the claim, and yet I know that there is no possible connection between the two conditions. The report of a proper physical examination, *before* employment, would probably clear up this claim at once, especially if physical examinations were required at intervals of, let us say, every two or three years. Men seeking employment, invariably, represent their vision and hearing to be of the best possible quality. They want work and they do not underestimate vision and hearing, *but,* when they seek compensation for injuries, they represent these functions to be as poor as possible, for reasons that are obvious to all. I, also, occasionally see patients who have sustained a slight head contusion, who in a few days complain of a bad smelling, discharging ear. An examination discloses an almost complete absorption of the drum head, and much necrosis and granulation tissue, conditions it takes months or even years to develop and conditions which, of course, have nothing whatever to do with the head contusion of a few days ago. Such cases would have no standing in court if previous reports of such ear disease could be produced. Proper physical examination of applicants for work should be made before men are placed at occupation. Such examinations would cost something, of course, but not so very much after all, and it is, in reality, a form of insurance a business man cannot afford to ignore, for it will surely save him thousands of dollars in due course of time by being in a position to defy many spurious claims for damages. Employers should regard such examinations as a legitimate and necessary form of insurance.

Proper eye and ear examinations prior to employment will exclude from factories, etc., applicants suffering from contagious diseases, such as trachoma, hypertrophic papillary conjuctivitis, foul discharging ears and other contagious diseases, thus lessening the diseases in shops and the

*Read before the Chicago Society of Industrial Surgeons, Nov. 6, 1922.

legal liabilities attendant thereon, to say nothing of the diminution of human suffering and disaster.

It must also be remembered that the most efficient and valuable services from workmen can only be performed when men are in the best physical condition and are working under the most advantageous circumstances. The physical examination of applicants, before employment, discloses their weaknesses, discards some altogether and enables the employer to place those who remain at work in places harmonious with their defects, thus enhancing their value as working units and also permitting the employee to seek medical or surgical advice for the correction of (perhaps) unsuspected diseases. A man, for instance, who has poor eyes can, perhaps, be fitted with glasses, or undergo treatment or operation for his relief and can also be given employment somewhat consistent with his infirmity. A man whose ears have been found diseased or defective can seek the advice of an aurist, and be placed at work where good hearing is not necessary to successful employment. Thus, it will be seen that proper physical examination before employment, and at subsequent suitable intervals, is not only valuable to the employer in protecting him from fictitious claims for damages, and in enabling him to obtain better and, consequently, more profitable labor, but it is also beneficial to the employee because it discloses defects and diseases, and enables him to seek relief, and it also prompts his employer to give him work harmonious with his physical condition. The only thing it antagonizes is *dishonesty* and this furnishes no excuse for doing the right thing.

Second, the proper lighting of shops is unquestionably of great importance in the prevention of accidents and is a subject that is constantly assuming larger proportions in the minds of shop owners, architects and illuminating engineers. Insufficient illumination can undoubtedly procure diseased ocular conditions, but so also may excessive and improperly directed illumination. Daylight is the best illuminant and should be utilized as much as possible. The next best illuminant is the one that most nearly simulates daylight. Illumination should be ample but not excessive, as too much light may be as injurious as insufficient light. Not only should illumination be ample and proper, as provided by enormous window spaces and by the best kind of artificial illumination, but the lighting should be properly directed so that each bench, wheel, vat, machine, etc., is *individually* well lighted and shaded so that the men can see distinctly and work without ocular effort, and most automatically. Some shop owners with semi-liberal minds, restrained by economical restrictions and possessing conceit, assurance and determination, equip their shops with illumination according to their own ideas, unhampered by the scientific and experienced advice of an illuminating engineer. They are, perhaps, determined to do the thing on a big scale and they install lights and plenty of them, in short their lights are an injury and an embarrassment to the employees. They are bad for the eyes. There is, perhaps, too much light, or at least it is improperly and unscientifically placed. It stares you in the face, it is dazzling, it makes work hard. Illumination should be ample but not excessive. It should be evenly diffused and should not fall directly in the eyes. It should come from above, behind and from the left. It should not throw shadows on the work. Bad lighting forces the workman to pay too much attention to seeing distinctly. This should be done without effort, thus enhancing his value by increasing his output and, incidentally, saving his eyes.

Improper illumination produces mistakes in work, wastage of material, and a greater liability to accidents. Twenty-five per cent. of shop accidents are produced by improper illumination, and the least number of accidents occur in July and August, because these months furnish more daylight than any other months in the year. The proper lighting of steel mills increases their output 2 per cent. and in textile and shoe factories the increase is 10 per cent. It only costs about 0.25 per cent. of a man's wages to properly light a shop. Thus if a man earns $3.00 a day, it will cost about one cent and a half a day to furnish him with proper illumination.

Shop owners should employ illuminating engineers to install their lighting, it will be cheaper in the end. Such men are quite agreed as to the superiority of the tungsten lamp. Its light closely resembles daylight and is cheap and durable. They should be supplemented with white porcelain enameled reflectors, and the entire lighting system should be kept clean.

White walls and woodwork and clean windows will add about 30 per cent. to the efficiency of natural or artificial illumination.

Third, I am happy to say that shop goggles are being worn more and more by shop workers. Not very long ago most men almost disdained the wearing of goggles. Some felt it was cowardly, others said they were a nuisance, interfered with their work, became easily fogged, etc. Almost all shops were glad to furnish goggles, but most of them laid in the shop unused. Many of the men are densely ignorant foreigners whose mental habit refuses to adopt innovations. The habit of wearing goggles gradually grew, inspired by educational pamphlets, talks, notices, pictures, etc., and now a vast majority of workers in shops wear goggles. They have learned that it is a good thing, that it saves the eyes, that it is a necessity. The Pullman Company declares that 35 per cent. of shop injuries are eye injuries and that most of them could have been prevented by the wearing of goggles. There are many kinds of goggles on the market, but the best of these is the "Saniglass" goggles. They fit well, have side shields, and the glass is clear, thick and very strong. The glass can, of course, be ground to correct the workman's refractive error, if he has any, and can be colored in any tint to harmonize with the man's occupation.

In the American Steel Foundries shop eye accidents were reduced 75 per cent. in two years by wearing such protection. In order to give an idea as to the kind of occupations producing the most eye accidents in the ordinary steel shops, I will say that undoubtedly hammering, (No. 1) produces more eye accidents than anything else. Then comes 2, emery wheels; 3, molten metals; 4, electric flashes; 5, riveting; 6 machine tools; 7, bursting of water and lubricating glasses, and 8, belting.

Fourth, improper tools and the absence of suitable protective devices for machines produce many eye accidents.

Most hammering accidents are caused by using tools with burred or mushroomed edges. When such tools are used steel particles are easily broken off and fly with great velocity into the eye, and produce serious consequences. Tools should be kept in good condition and when the edges become even slightly mushroomed, they should be immediately repaired, a precaution which will save many eyes from blindness. Modern shops are being more and more furnished with all kinds of safety devices, for they have been found to be both beenficial and economical. Shops should be kept cool, clean, light, and as nearly dustless as possible, for men can accomplish more and work better under such circumstances. Emery wheels should be protected by glass or leather guards or hoods, and dust particles should be sucked away by an exhaust system. Emery wheel accidents are very frequent and some men who work at emery wheels have their corneas speckled by the oft-repeated assault of emery wheel particles. I have seen the glasses or goggles of emery wheel workers speckled so that they look almost like glazed glass, so often have the glasses been struck with flying particles.

Vats containing molten metal should be handled carefully and should be surrounded by protectives. Goggles, or still better, leather masks with goggles, should always be worn when handling molten and babbitt metal for burns from splashing molten metal are most gruesome and discouraging in their character.

Electric flashes can be avoided by using enclosed switches and fuse boxes. Riveting and punching machine accidents can best be avoided by care and the use of goggles. Milling machines, shapers, etc., should be protected by what is known as glass chip guards. Water and lubricating glass accidents can be much reduced by using the very best glass and by protecting the glass with suitable guards as the contents are under constant and strong steam pressure.

Eyes are sometimes injured by being struck with broken belting caused by improper jointing. Endless or glued joint belts should be used instead of hooks or lacings to make a joint. Belts should never be replaced on a pulley by a stick as is so frequently done. Serious eye accidents sometimes result from such practices. Excessive light or heat in shops, particularly steel shops where electric welding is done may produce retinal and other eye injuries. The temperature and light in these furnaces is tremendous. Cast iron furnaces possess a temperature of 2,000° F., and in electric welding the temperature may rise to a height of 12,000° F. Such heat and glare may produce retinal and optic nerve changes and burns of the skin, conjunctiva and cornea. Screens of blue or red glass should be used and the workman should wear an aluminum helmet. Retinal changes may occur from grinding carbon or manganese steel, where the worker looks constantly into a steady stream of sparks and while doing this work amber goggles should be worn.

Amber goggles should be worn by glass blowers to prevent cataracts and by silver burnishers, who look protractedly upon highly polished surfaces, to prevent retinal changes. Goggles should be worn when the oxyacetylene torch or electric are in use.

Fifth, the individual who has come to be known as "The Shop Oculist" deserves a section all to himself, as he is one of the greatest menaces to eyesight in the average shop. Fortunately the public has become considerably educated concerning such matters and the career of the "Shop Oculist" is on the wane. He still exists, however, in many shops and until he is utterly exterminated, the propaganda against him should continue. He is one of the great body of workmen who has acquired an undeserved reputation for removing foreign bodies from the eyes of his brother workmen. He is ready at any time to suspend his dirty work, and with unwashed hands endeavor to remove a particle of any nature whatsoever from the eye of some unfortunate workman. He proceeds to his unwarrantable work, as I have said, with dirty hands, with conceited assurance, with poor illumination and tools, and without lenses and cocain or adequate knowledge. Sometimes his efforts are successful and harmless and this, of course, adds to his assurance, egotism and reputation. But frequently, alas, in endeavoring to remove a tightly driven foreign body from the cornea, with dirty hands and tools, with improper illumination and a moving and roving eye and without cocain or antiseptic precaution, he only succeeds in mutilating and infecting the cornea and, finally, after having done his best, or rather his worst, advises the injured victim to do what he should have advised him to do at the start, viz., go at once to a competent oculist. The appearance of such eyes when they come into my hands is often appalling and requires heroic treatment, but at the best a large scar usually remains which, more or less, impairs vision in accordance with its density, extent and location. But many of these cases go on to a violent infection, ulceration, hypopyon, panophthalmitis, and enucleation. It seems to me, as I look back over a large and varied experience of ocular accidents, that I have seen more eyes destroyed by the improper initial treatment of minor injuries than from any other one cause. The removal of foreign bodies from the cornea should be considered a serious affair and should not be undertaken by laymen or general practitioners. I hope I do not offend my general practitioner friends when I say this, but, as a rule, they have no more qualifications to do this work than I have to treat measles or mumps. Some particles are easily removed from an unanaesthetized cornea, but most of these invaders have to be dug out with a spud or a cataract knife and herein consists the danger. They should be removed under strict aseptic precaution by an experienced and steady hand with proper illumination and lenses, and with the infliction of as little damage to the cornea as possible. This is frequently a tedious and nerve-racking affair and only experienced and patient ophthalmologists are adapted to the work. Foreign bodies are sometimes deeply imbedded and are almost impossible of removal, even by the exercise of great skill, experience and tact, and the use of fluorescin to outline the site of injury. Such injured men should be given the best chance for the preservation of vision and such an opportunity does not follow the ministrations of the "Shop Oculist," Shop Nurse, and I am sorry to say, not always the Shop Doctor. Such cases should be sent immediately to a competent oculist, thus saving eyes, vision, suffering and expense.

Sixth, attention should be paid to the fact that certain occupations are apt to injure vision and every precaution should be taken to prevent this disaster. For instance, di-nitro benzine, which is used in manufacturing anilin dyes, injures vision by inhalation, which can be prevented by ample ventilation or by using closed mixing vessels. Bi-sulphid of carbon, used in vulcanizing rubber, produces a vapor which injures vision by producing retinal and optic nerve changes with a very poor prognosis. Nicotine may be absorbed in tobacco factories, with characteristic ocular symptoms. Both tobacco workers and tea tasters may develop amblyopia. Paper hangers, painters, workers in arsenical preparations, etc., develop the fact that arsenic is absorbed principally through the respiratory tract, producing eye pain and irritability, optic neuritis and atrophy, etc. Eyes are damaged in plumbers and painters where lead is used. Lead enters the body through the fingers and lungs. Headaches, poor vision, scotoma, ptosis, paralysis, etc., are noticed. Carbon monoxid very occasionally produces optic nerve and retinal disturbances and paresis of the ocular muscles. Most of the ocular

disturbances from chemical causes can be avoided by strict cleanliness, especially of the hands, and by thorough ventilation. Wood alcohol is used in many industries and workmen should always be acquainted with the fact that they are dealing with a deadly poison, capable of producing blindness, from optic nerve atrophy, and even death. It is used, for instance, in cleaning off shellac from the interior of beer vats, where the fumes become very strong, especially when the ventilation is poor. This menace can be combated by using as little of it as possible, and by extreme cleanliness, and thorough ventilation. High explosives in mining, railroad construction, etc., produce many serious accidents. Bursting bottles in charged water factories and lime burns in masons, bricklayers, plasterers, etc., often produce disastrous ocular damages. Great care under such circumstances, with a full realization of the damages involved, will prevent many sad accidents. The eyes of miners are not only threatened by explosions, in dislodging coal, but by nystagmus from working underground with insufficient illumination and from working while lying on the back. Mines should be abundantly lighted, abnormal postures while at work should be avoided, errors of refraction should be corrected, the health should be kept up to the highest standard, and the hours of submerged work should be as short as possible. Certain occupations, involving exposure of the eye to heat and light may produce slowly developing cataracts. This is conspicuously the case with glass blowers but may occur in any industry where the eyes are exposed for long periods of time to intense heat and light. The greatest protection consists in wearing thick colored glasses that disperse both heat and chemical rays.

I am well aware that this paper has not completely covered the subject. It would have to be much longer to do this, and I did not feel at liberty to occupy too much time. Enough has been said, however, to demonstrate that almost all occupations possess dangers to eyesight that should be thoroughly understood and carefully guarded against. But before closing this article I wish to say just a few words for the benefit of the great army of office workers whose eyes are being damaged bp protracted work on books, papers, etc., by poor illumination, and without having their eyes properly corrected by glasses perhaps purchased at an optician's or stores where "Examinations are Free." All of these details should receive proper attention by those who are earning a living by visual work performed in an office or store.

In a later paper I intend considering the treatment of eyes that have been injured in Industrial Occupations.

7 West Madison Street.

THOUGHTS ON MEDICAL ORGANIZATION*

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The unrest so prevalent everywhere is seen in the medical profession and even more than in the profession, it is noticed in the attitude of the laity toward the healing art. For that reason if results are not secured promptly the patient flops from one physician to another and soon he leaves the physician for the irregular. Patients no longer wait all day for the family physician to come, even if the case is not urgent; if they have made up their minds to consult someone, he must be seen at once or if he is not available they go to someone else. I remember very well a patient telling me that thirty years ago he thought nothing of waiting all day for his own physician if he was engaged somewhere else. But even more noticeable is the unrest by the patient demanding results at once and if not obtained he is in the hands of the irregulars. Sometimes a patient will be treating with his physician and an irregular at the same time, unbeknown to the physician.

All unrest has of late been ascribed to the results of the war, but that is only a factor. We are living in an era of disquietude and it is probably only a stage of evolution of the human race. The conditions of twenty years ago will never return, and that holds in medicine as well as in all other phases of life.

Then what about medicine of tomorrow? I may as well state here that the outlook to me is not so hopeless as often pictured. Medicine has lived hundreds and hundreds of years, ever growing better and coming nearer to an exact science. It has lived down many superstitions and of late it is living down many of the irregulars. But

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nevertheless there are many things we must do to keep to the fore and these things fall into two classes; 1. We must ever keep improving medicine to the highest degree and the individual physician must ever keep himself informed of the best in medicine and (2) we must see that no harmful laws are passed to retard medicine as a science or the physician as an individual. We must keep on improving medicine and also ourselves. Medicine and surgery as a whole have made great progress in the last thirty years. We need think only of diphtheria antitoxin and of the prophylaxis in typhoid and tetanus, in the Salvarsan treatment of syphilis and then the use of x-rays in treatment and diagnoses.

On the surgical side it is even more striking; in fact surgery has been completely revolutionized and every day things are accomplished which were not even dreamed of thirty years ago. We need not worry about medicine progressing, but rather must we be on the guard that the rank and file in the profession keep themselves continually informed as to the progress made by the few. We are too prone to fall into a rut. The day's work is tiresome and we would relax by taking up some amusement, rather than sitting down with the latest medical journals. Then again we think we can't afford to attend the County Medical Society for one-half day each month because something might slip away from us, or again if it is summer we would rather spend that time on the golf course. The man who fails to regularly attend his County Society meeting misses the best and least expensive way of getting post-graduate work that there is in medicine. No matter what the subject is, I have never failed to learn something valuable at these meetings, something that comes up in my daily practice.

By not doing our work thoroughly we are giving the irregulars their opportunity. If we neglect to take the proper interest in our cases the patient feels it. This trouble generally arises in the chronic cases. We treat our acute case well and we rarely have much criticism here. How often have you heard a physician say, "Well, I like to have the fever cases, because in due time I get them over it and they are well again, but these chronics that keep coming week after week, those get my goat." Right here, gentlemen, these chronics are the ones you want to knuckle down to and work out; when you have done that you have really accomplished something. But instead of getting down and making a real diagnosis you ask a few simple questions, give the patient a bottle of medicine which will last for a week and then when he comes back the same thing is repeated. That gets you nowhere and before you know it the patient is in the hands of the irregulars. Most physicians are fairly regular in blood pressure readings and in urine examinations, but we woefully neglect the blood counts. Do you know that the diagnosis of neurasthenia is going to be something very rare in the future, because just like muscular rheumatism is covers a multitude of diagnostic sins. When you find a little tenderness somewhere in the right lower quadrant of the abdomen it is so easy to conclude that it is appendicitis. If it is a female and the case is not acute be sure that it is not the right ovary giving the trouble, or possibly the gall bladder. Or even a much more serious mistake, is to overlook the possibility of a renal calculus or a hydronephrosis. If the trouble is found at operation to be in the gall bladder or ovary it is not so serious because it can be corrected through the same incision, but if the trouble should be in the urinary organs the error is great. That this error occurs often is proven by the statement of one eminent St. Louis urologist who states that three-fourths of all cases of hydronephrosis and urinary calculi, that come to him, have had their appendices removed and that 90 per cent have had no relief from the appendectomy. I believe in removing every diseased appendix, but I also believe in making a careful diagnosis beforehand. Of course errors in diagnosis often are excusable and because of that we are trying continually to improve our diagnostic methods. It requires much time and many appliances which are not always at the general practitioner's personal command to clear up these obscure cases. Medicine is far too broad a field for one man to know it all and this has been recognized for a long time and has given rise to the men who limit their work. The first man who limited his practice to the eye, ear, nose and throat in Chicago was the laughing stock of the profession, but he proved himself to be right and specialism has developed to such a degree that just lately I saw where medicine was divided into seventeen different fields in one California hospital. Thre is no question but

that the tendency toward specialization is greater than ever before and that it will appear in one of two forms: 1. Either it will be a continuation of the present condition where the general practitioner, when he feels lost, sends his patient to the specialist that he thinks needed in the case; but more and more will it be seen that the patient sees this specialist early and because of that fact the field for special study will increase steadily, while the work of the general man will decrease or then we will have the alternative of 2. Group medicine which has appeared in many different forms and being in its infancy it is quite natural to see that it has many defects. When you have worked out a scheme where group medicine includes the general practitioner, as a part in the group, you have worked out the future of medicine. Medical societies teach, yea preach that every practitioner must be interested in medicine as a whole and in medical organization. Well to me it seems that group medicine is simply putting this idea into a practical working basis.

Of one thing we must ever be on our guard and that is the ill feeling which is only too likely to crop out between individual practitioners and of late even between the practitioners and the specialist. When ill feeling is developed among doctors it always reflects itself in the attitude of the public toward us and our noble profession has received another black eye. The irregulars are only too anxious to find some cause of disagreement among physicians and this is just to their liking.

2. Coming now to the second group of things that we should see that no harmful laws are passed to retard medicine as a whole or the physician as an individual.

Two months ago at a medical meeting the councilor of the district to our east said that one state in the west licensed 29 different kinds of irregulars. That means that these classes could treat the sick. Now if they treat the sick, why are they not required to show that they have the equivalent in education as the physician? By not having a proper knowledge don't they often let the time pass when a case is curable to the time when it has become incurable? Don't they endanger an appendicitis case in waiting until the appendix has probably ruptured? By not being informed on these points don't they endanger the patient?

Just one year ago the State Senator from this district asked me to come and see him in regard to some pending medical legislation. I got there in a hurry. He told me that if the physicians didn't wake up they would surely have something put over on them. He told me how one class of irregulars had simply stormed the legislative committee; they were making a tremendous noise; in this county they had one of the very best lawyers about ready to flop to their side, and all this time the medical men were doing nothing. Of course you know the legislators are human and they are easily led to believe that where there is the most noise there are also the most votes. A representative, you know, is supposed to represent and he will think that the most noise means also the greatest number of people and he will represent them. So let's get together and make some noise of our own.

Dr. Edward Ochsner says: The Medical Practice Act fence has been built too high and has too many holes at the bottom. We have built it so high that we require our medical students to study six years before they are allowed to treat the sick; and the irregulars with practically no training can crawl in through the holes in the bottom of the fence.

Many of the laws as they are passed are damaging enough, but worse than the laws themselves is the spirit in which they were passed, the absolute disregard of the wishes and the desires of the medical profession. The Sheppard-Towner bill will be followed by more drastic legislation and before we are aware of it we will be face to face with real "State Medicine." We have been able to fight that thing off so far but this Maternity bill makes a strong bid for ushering in State Medicine through our back door.

THE ETIOLOGY AND MANAGEMENT OF NEURASTHENIC CONDITIONS*

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I wish to express my dep sense of the honor done me in an invitation to address this old and important medical organization. Also it is very gratifying that you are willing to entertain a message from the neuropsychiatric side of medical endeavor. I assure you I am personally ambitious that the message represents, in some de-

*An address read at the 48th Annual Meeting of the Southern Medical Association, Cairo, Ill., Nov. 2, 1922.

gree at least, the fact that neurology is moving forward in helpful relation with the other branches of our profession's work and progress.

To speak on any phase of neurasthenia would seem a fairly bold undertaking for reasons that suggest themselves to both audience and speaker. The subject is old enough, trite and vague enough in the minds of all of us to excuse one for sidestepping rather than to accept the challenge of again approaching it. However, one of your number in whose wisdom I have great faith has sent the challenge.

As you are aware. neurasthenia is included among the neuroses, so-called. In passing permit me to say that the modern tendency in contemplating these neuroses is not to define them severally as distinct entities in any important sense, but rather as phases of aberrant functioning in certain associated mechanisms. For here we have found, as we have in the whole field of medical science, that we have been too prone to contemplate this and that function and the reactions attending it in a relatively isolated way, failing too often to grasp in full significance the broad physiological conception of the interdependence of all functions. The problem always before us is not simply functions but the great biological and physiological scheme of the organization of functions, the integration of all functions. We are awakening to the value of our biological and physiological instruction in the practical affairs of our daily work as practitioners.

From this standpoint I ask you to join me in approaching the special theme before us this evening. To this end let us indulge ourselves in some brief reminiscences of fundamentals. For our present thought we may tap, as it were, the evolutional scheme at a level where organization has reached a complexity of function that involves more immediately and evidently our own comparative studies of physiology.

Physiology teaches us that the organization of functions is attained by the integration of reflexes. Starting with the conception of the simple reflex as the unit of dynamic activity in the nervous system, the scheme expands with the "compounding," the "conditioning" and "elaboration" of reflexes from the simplest type to the highest complexity of structure and function. We are all familiar with the old laboratory figure of the pithed or decerebrated frog flicking from his flank a bit of acidulated paper by a fully coordinated effort of his hind leg. Here are coordinated and associated movements, technically speaking, accomplished by a system of reflex activities evidently defensile in their intent. The details of what further performances Mr. Frog may accomplish with his scanty brain intact are of course matters of physiological record; but we need not concern ourselves with them here. For this simple figure may serve (I trust with pleasant fraternal memories of our laboratory days) to arrest our minds in a freshened contemplation of a basic fact, namely, that even in the case of man, representing the highest complexity of organization, the most exalted functions are thus definitely correlated with all functions of all levels of the organism, and all on a definite defensile scheme.

Intellect, in the broad sense of the term is the highest pinnacled of the sentinals of this defensile system. Yet, we must remember that even this in its exercise must conform entirely to the structural, the biological and physiological arrangement upon which it has been foundationed; and this is the most important teaching of modern orthodox psychology.

For example, to make a practical application of this point, we may not judge any individual patient's mental capacity to adjust himself in the struggle of life, whether socially or physically, until we have full insight to his particular case, to the whole make-up of his physical and psychical self—his personality. Intellectually he may be in certain directions superior, yet from his emotional side so handicapped that on occasion he cannot defend himself against reactions that present a "silly" contour. In fact we often conceive of the erratic behavior of neurotic as a sort of reversal to a lower-level type of defence, when in states of inhibition of normal mental control, they instinctively are trying to escape from or to repress this lower-level turmoil within themselves. In other words it is a reaction of defense, an attempt at defense, with portions of the normal defensile equipment out of order.

"Pain is the psychical adjunct of an imperative protective reflex." (Sherrington.) With this

definition as a starting point we may follow up the scale. Other protective mechanisms have their type or grade of psychical accompaniments. These are correlated with other reaction of their own level and again integrated with the reactions of higher levels and up to the "supralevel" sphere as we sometimes express it. Thus we have a snap-shot of the integrative plan.

The organ of this integrative process is the central nervous system. The study of it is the particular concern of the neuropsychiatrist in an effort to interpret its practical relations to all other fields of correlated activity. In proportion as he is successful in accomplishing this the neuropsychiatrist attains an official relation to the profession and in a sense to the rest of society as well.

For many years psychologist and physiologists have been busy trying to solve the inter-relations of psychic and somatic influences in the production of the neuroses. In its simplest form, the question is: whether certain visceral reactions may by a peculiar type of stimulation start up certain classical psychicaly reactions, or, on the other hand, whether the visceral reactions are the result of psychic stimulation, from other sources, which acts on the nervous mechanisms controlling the viscera. As we all know the psychic phenomena of the neuroses are characterized by a large emotional coloring or component. On this point Sherrington, the eminent physiologist, observes, "That marked reactions of the nervous areas regulating the thoracic and abdominal organs contribute characteristically to the phenomena of emotion has been common knowledge from time immemorial. The fact of the connection is admitted on all hands, but as to the manner, opinion is at issue." This problem of psychic and somatic etiology in some of its proportions is presented to us in practically every neurotic patient that seeks our attention. What I am here citing must remind us that we cannot afford to decide carelessly the bearings of it in the individual instances that come to us. We are too often prone to do so in off-hand fashion, thus doing an injustice to ourselves and our patients.

In considering the neuroses the most modern orthodox explanation, so to speak, has its origin in the conception of harmful conflicts, created within the mind in its effort to repress unpleasant memories and experiences. It is assumed that the emotional reactions attending these repressions and conflicts often reach an intensity to cause a serious "drainage of nervous energy" with a lowered resistance, harmful degrees of exhaustion, etc.

As individuals we are all conscious, even from early childhood, of these mental conflicts over various matters, ethical, social, cultural, physical and what not, and we are conscious also of our efforts to repress the unpleasant features which lead to these conflicts and which result from them. We also can notice that there is a difference in degree or manner or activity of these repressions. Some of them are quite planned and deliberate until we have thereby divested our minds of certain desires or impulses or unpleasant memories. Some of these repressions on the other hand are nondeliberate in the sense that they are habit—like and not accomplished with "conscious thought or deliberate decision." We can also conceive of this latter or non-deliberate type of repressions as never having had a place in our conscious memory, either in their origin or their operation (or at least if they had, all memory of them having been obliterated.)

It is at this point that the Freudian idea of the unconscious and the proposition of psychoanalysis has been injected into modern psychological thought. In brief the contention of Freud and his follows is that there is a large part of the mind of which we are entirely unconscious but which nevertheless exerts great influence upon our conscious thoughts and feelings and actions. They hold that many memories and impulses, conflicts, repressions, etc., remain buried in these depths of the mind and never rise to consciousness unless dragged there, as it were, by the process of psychoanalysis. This as you know is the technical method by which these buried memories are lifted into the consciousness of the patient where he may adjust to them on a conscious basis and thus divest himself of the disturbing effects of them. The details of these methods are of course too extensive to describe here as are also those of the Freudian conception of the origin of the conflicts. The value of the Freudian teaching in eluciding certain psychological problems is admitted by progressive psychologists quite generally, many of whom however do not accept all of the deductions made

therefrom. As to the process of psychoanalysis in its strict interpretation and employment there are many reasons for the most conservative opinion even on the part of those who are well informed about it clinically. Meantime we are all becoming daily more aware of the immense amount of humbugging and chicanery and out-and-out quackery that are being propagated under this name and guise. (The Freudians have no patent rights on the term). In all of these healing cults of whatever growth there is a more or less successful adaptation to the principle and the laws of suggestability. Superficially the Freudian conception is open to abuse of this kind.

All neurotics have morbid contentions of some kind within their personality. This is all the more evident when as patients they apply to some source or other for assistance and relief. The direction to which they turn for professional help is determined by various circumstances. A goodly proportion of them are wafted to the medical profession. They strike us at various sectors according to their conception of what kind of aid they are most in need of. Our obligation in attempting to care for them is a multiple and complex one: the obligation to the patient as an individual, the obligation of the individual practitioner to himself, to his profession and to society. The responsibility is great and serious. As members of the organized profession of medicine we recognize and try to prepare to accept this responsibility. This is evident in the modern methods of organizing and co-ordinating the various branches of our scientific work. Neuropsychiatry is anxious for and striving for a proper footing in this kind of organization. In fact we modestly admit some share in the accomplishment of it. But like the rest of you we are far from willing to rest on our honors, for we all sense the ever present necessity of improvement and a still farther quest for opportunities. The very best stimulus in this direction is a constant, frank and sociable criticism amongst ourselves. If we are thoroughly honest and vigilant in this we can always afford to neglect that of outsiders. In line with this spirit of injunction, permit me to suggest that too few of us have gained sufficient interest in the psychic side of the neuroses, and, to be more severe, I believe more of us should be trying to do so. Because of this belief on my part, and that of others, I have made bold, too tediously I fear, to open our discussion this evening with a preface of some general biological and physiological observations, and I beg to repeat that it is only along these lines that we may hope to adjust psychic reactions with all other reactions in the patient whom we would study as a unit. Speaking to this point Dr. Lewellys Barker, of Johns Hopkins, in his usual forceful way of utterance says "There is too much of the bad habit of expecting that the mental problems and mental conditions should be intelligible out of one's understanding of mere words and ponderings, when, as a matter of fact, one should have some first hand experience with real and tangible human reactions and life factors and the methods of work with them." In order to further impress this contention I will quote an excellent clinical definition of neurasthenia, and offer some comment thereon:

> Neurasthenia is a state of habitual valetudinarianism with no corresponding or characteristic organic lesion. It manifests itself in a series of phenomena which are objectively of little importance, since they do not endanger the life or affect the general health of the individual, but which are subjectively monotonous, pertinacious, and wearisome. Among these symptoms the principal is a sense of profound lassitude, which finds no relief in bodily rest. In certain cases there are obsessions, doubts, and hesitancies, which, however, do not obscure the intelligence, but rather refine it, inclining it to introspection. Sometimes cases of tuberculosis, heart disease, influenza, tabes, progressive paralysis, dementia præcox, and many other chronic diseases are preceded or accompanied by long attacks of a neurasthenic nature. True neurasthenia, however, occurs by itself, and persists as an entity with a limited number of symptoms, which are repeated from day to day. There is an acute neurasthenia which passes away, but which gives reason to suspect the presence of a latent predisposition; and there is a constitutional neurasthenia which is liable to remissions which seem to be recoveries. The distinction between these two forms of neurasthenia is not always easy. There is also an associated form of hysterio-neurasthenia (Charcot), and varieties of traumatic neurasthenia and hemi-neurasthenia have been described. All these varieties with their distinctive names, which require no explanation, point to the affinity which exists between neurasthenia and hysteria.

I have never encountered a better clinical definition at least in the same amount of language. If we regard it attentively our first reflection

must be upon the psychic problem involved and, secondly, how are we to determine its bearings.

Professor Tanzi, the eminent Italian, whom I have just quoted, alludes here to the affinity, as he styles it, between neurasthenia and hysteria. Let us read also the few lines in which he briefly sets forth a conception of hysteria:

Hysteria is a constitutional, and generally hereditary, disposition of the nervous centres to react anomalously under the influence of stimuli which in normal persons escape notice or are insignificant. These anomalous reactions by which hysteria manifests itself from adolescence onwards, and sometimes from childhood, in all the spheres of innervation, may be positive or negative, permanent or transient, frequent or rare, partial or general, trivial or important, in different cases and at different times, but they are not without limits and laws. Among the stimuli that are capable of provoking them, the most important are the emotions, which are powerful and uncertain in their effects even in healthy and well constituted persons. In its relation to physiological laws hysteria is thus illegality, not anarchy. It is less a disease than an anomaly of the nervous equilibrium, to which there may perhaps correspond an anomaly (not very marked) of the chemical equilibrium. For this reason hysteria is neither the cause nor the effect of anatomical changes. It never leads to dementia, and its manifestations, even though localized and prolonged, are never irreparable.

Here again we note that the psychic problem obtrudes in the same way. Some would hold there is no essential difference in it in the two types of neuroses.

Professor Tanzi's view here expressed that a constitution predisposition or hereditary defect of some kind is the basic etiological factor in all neuropaths is universally held by standard students and authorities. What this is, what it consists in, none of them, of course, can affirm. Yet there is a fascination in speculating over it. When we think of mere structural defect in this connection, we are reminded of the mysteries of structure to the utmost we can follow it, and of the greater mysteries that lie beyond our sense investigations. Yet this mere intellectual quest enables us to forsake the crude conceptions we were wont to entertain. From the physiological or functional side we are also tempted to picture an explanation of this short-coming which we call, "constitutional." We envisage here a greater array of items for our imagination to play with. Our minds here run to chemical agencies. The intricacy of these chemical reactions in the problems of "conduction," their influence on "synapse" and "threshold values," in fact in the whole integrative functioning of the nervous system. We try to conceive of the normal functions of these physio-chemical agencies being quite directly disturbed by toxic materials of exogenous and endogenous origin. But here again we are warned not to block our minds to broader view by indulging in mere fancies concerning constitutional animalies.

For example when a person allows himself to adopt the belief that all neurasthenic patients are explanable on a basis of mere toxic states there is no end of the measures along this one theory he may resort to. According to his enterprise the scheme expands to include trials of elimination, anti-malarials, endocrine substances, serums, and what not. If he is very bold, his patient may lose a section of her large intestine, a sacrifice to the fetish of auto intoxication. If she escapes with her life it will be probably to christian science or some such cult, there to desseminate a noppobrium fully deserved by the culprit, but which reflects, in the eyes of the undescriminating public, on the profession.

Some years ago I wrote an effusion under the rather whimsical title of "The Neurasthenic at the Threshold." At the time the idea of physiological threshold was rather new in the vocabulary of some who were discussing phases of neurasthenia. In the course of my remarks I tried to make a kind of metaphorical play on the word, to the point that the long abused neurasthenic had at last reached the threshold of a more sane consideration on the part of our profession. To some extent I think my optimistic views then expressed have been realized, but even yet we have not gotten said neurasthenic clear across the threshold into our nursery for the tender handling which he is entitled to.

Once upon a time, as the story books read, the neurasthenic was regarded largely as some kind of a cross between a joke and a real patient to be exploited by any one who was willing to give him a try. If some sportive, so-called, surgeon, wanted to see how his lamb might cavort when deprived of a few seemingly offensive viscera, there was no forcibly intelligent protest. But we have now certainly reached the point where our protests are backed up by the kind of scientific evidence and argument that should appeal to every physician worthy the name. We do not

like to believe that mere mercenariness clouds this scientific appeal in any quarter. Let us examine our hearts, in light of a newer science if you please, but in the closet as well.

I believe my title says something about treatment, but why worry about treatment. There is a splendid panacea for worries of this kind, and that is diagnosis. I might modify this by saying assimilable diagnosis. You nor I can gain the right attitude and inspiration for treatment of a case unless we can critically assemble and assimilate the items upon which its correct diagnosis depends. It goes without saying that this idealism is not attainable in every instance. Too often emergency, lack of opportunity and of cooperation, etc., prevent. Hence proportionately we flounder in trials of therapy. Nevertheless the ideal is in the minds and nearest the hearts of all real workers in our profession and we shall continue to strive for it. As to the manner of striving there is more or less confusion of opinion amongst us always. Out of his confusion grow the almost endless discussions of such topics as laboratory findings and their value, the place and value of specialist, of group medicine, the seductive efforts of commercial laboratories, etc., and above all, the relation of these matters to the general practitioner.

Meantime, in the midst of this discussion over ways and means, the neuropsychiatrists above all others are insisting on the very old conception of holding the *patient* as the central figure in each diagnostic and therapeutic scheme. Even in the greatly broadened and complicated scope of our modern medicine we must not forget, in our spasmodic enthusiasm over methods of treatments, to fit the patient properly into the scheme of practice. Or conversely, the scheme of practice must be best fitted to the patient's actual interests. The general practitioner is, of course, the individual who must maintain this guardianship of the individual patient's interest. His credentials with the profession and with society must depend on his ability to accomplish this service; and the specialist of every description is accredited properly only when his conduct conforms to these requirements. Within the "domain of medicine" our patients must continue to receive this comprehensive attention to all their ails or they will wander elsewhere in quest of it.

SOME THOUGHTS ON PREVENTIVE SURGERY WITH SPECIAL REFERENCE TO FOCAL INFECTION.

George H. Parmenter, M. D.
BEECHER CITY, ILL.

Many factors go to determine longevity. Certain people inherit a poor physical equipment which makes them susceptible to acute or chronic disease and they die early as a result, while others inherit disease which cuts short life. We will for our purpose leave out of consideration those who start life with inferior physical equipment and consider only those who start life with good physical make-up. In other words those whose life expectancy should be good. If there are conditions which are discoverable and removable which if not interfered with will cut short life it would be well for physicians to be alive to such conditions in order to remedy them and it is important that they be remedied early before great damage is done. One condition or class of conditions at least which will do this is focal infection.

From the beginning of life the organism receives damage from various sources. Normal physiologic processes as digestion and metabolism probably produce at times by-products which are injurious to body cells. Intestinal bacteria produce toxins that are harmful and hardly any of us will escape entirely a period of time now and then when there is absorption of harmful intestinal toxins. Acute diseases such as measles, scarlet fever, typhoid fever or acute respiratory tract infections all will produce toxins that are injurious to vital organs but the acute infections act temporarily and the damage is usually not great. Probably there are some obscure states of altered matabolism which produce toxic products which are injurious to body cells. There are, no doubt, other agents that do damage to body cells but which we know nothing about; tobacco, tea, coffee, alcohol may be mentioned as contributing factors. These agents constitute what we call normal wear and tear of life. It is the accumulation of the harmful effects of such agents which produces the conditions found in people who are old. Yet a person of ordinarily good physical equipment should carry this inevitable load to the 70th or 80th milestone, but give him an additional load of focal infection and he may go only to the 40th

or 50th or 60th milestone depending on how great the additional load may be. A man is as old as his oldest vital organ or his most damaged vital organ.

Primarily focal infections are most commonly found in tonsils or teeth or both. The foci may be in nasal passages or accessory sinuses. Seminal vesicles and prostate and ovaries and fallopian tubes in the female may harbor infection. Gall bladder, appendix and kidney pelves are other points but these are not primary but are secondary to other foci of infection. In order to have infection in an appendix, gall bladder, kidney pelvis or any deep organ bacteria must enter the body at some point and the commonest point of entrance is tonsils or teeth or both. In children tonsils are guilty, probably oftenest but in people of middle age or over the teeth are probably harboring the most of the infectious agents which feeds the blood stream with bacteria, but both teeth and tonsils may be guilty in these older people.

Bacteria entering the body in this way are carried through the blood stream to various organs and set up acute or chronic processes in appendix, gall bladder, kidneys, muscles, heart muscle, joints, etc. Thus focal infections are primarily the cause of appendix, gall bladder, kidney disease and many pathological heart conditions. An infected appendix, gall bladder or kidney is dangerous not only because of danger of acute exacerbations but because of the focus of infection which daily supplies bacteria which entering the blood stream endangers other vital organs.

So the physician having in mind the welfare of his patient must consider the chronic appendix, etc., as a focus of infection as well as from the standpoint of danger from an acute attack which endangers life immediately. Aside from acute attacks there is a more remote danger from an infected appendix or gall bladder or whatever the infected organ may be. That is danger that is removed 10-20-30 or even 40 or 50 years.

We see almost daily people who are in advanced stages of cardio-vascular-renal disease with high blood pressure, damaged heart muscle and arteries and damaged kidneys. There may or may not be albumin in the urine in these cases. Very often there is not but the microscope will show casts and there is lowered specific gravity and other evidence of chronic kidney changes. It does not necessarily follow that there is no kidney disease because the nitric acid or heat test for albumin is negative. These people are usually between 50 and 60 but may be older or younger. Invariably these people are carrying or for many years have carried foci of infection and it is pretty nearly the rule to find a mess of infected teeth and tonsils in such cases. At the ages mentioned the tooth infection is usually most in evidence but tonsils are often infected as well. It is quite common to find chronic appendicitis and gall bladder disease in addition. In many cases tuberculosis is added, it having become activated as a result of lowered resistance brought about by focal infections. In this connection mention should be made of certain types of infected tonsils. A tonsil does not have to be enlarged to be carrying infection; neither is it essential that there be frequent attacks of acute tonsilitis or sore throat. Some very small tonsils carry even more infection than some very large ones. The infected tonsil may be a very small one or may be buried and hidden. Such tonsils are as dangerous or even more dangerous than some of the markedly large and smooth appearing ones. The infected tonsil may not appear abnormal at all but there is a zone of redness over the anterior pillar or by palpation enlarged submaxilary glands are felt and these are as sure signs of tonsil infection as we have unquestionably mean tonsillar infection and are decided indications for removal.

In the fairly well advanced cases of cardio-vascular-renal disease the damage is great and nothing we can do will produce 100 per cent. cures. Kidneys, heart and vessels are too greatly damaged to be completely repaired. We can not remove the fibrous tissue produced by long continued infection and replace it with normal renal tissue. If we can eradicate the foci of infection we may be able to arrest the process and give the patient many more years of life than he would have otherwise. But if the foci are in tonsils, teeth, gall bladder and appendix it is a pretty big job to clean them up as they should be. Many patients are going to refuse such an extensive surgical procedure. However, we will see many people whose damage is not so great and whose foci of infection can be removed and these get good results from removal of the foci

of infection. In those who have greatly damaged cardio-vascular-renal systems the foci should still be removed if possible and this will often arrest the process but even so a fibrous kidney may still contract enough to destroy the function of the remaining normal kidney structure.

We can do much to prevent the late effects of focal infection by watching carefully children and young adults for infections, especially in teeth and tonsils. At these ages more infection probably will be found in tonsils than in teeth. I believe, however, that sometimes tonsil infection is secondary to infected and carious teeth. This is in children whose first set of teeth is carious and infection harbored there and daily carried back to tonsils, sooner or later produces infection there.

In every infected tonsil or tooth there is a potential appendix or gall bladder operation or operation for kidney stone or pyelitis, etc. There is also the probability of heart muscle and endocardial inflammation with crippling of valves or myocardium and the condition we call cardio-vascular-renal disease or degeneration. Of course, in looking at an early case of focal infection we can not always say that any of these conditions will inevitably follow but we can recognize the great probability and advise accordingly. Nothing has been said about rheumatism which is due to focal infection. All physicians are familiar with this manifestation of focal infection. There are cases of rheumatism which are not apparently benefited by removal of foci of infection and when the physician advises removal of infected tonsils or teeth in cases of rheumatism he will quite often be told that so and so was advised to have tonsils or teeth removed and assured that it would cure his rheumatism but has not been benefited by this proceedure. No doubt such cases do occur and the reason doubtless that no benefit is received is that the focus was not entirely removed or there were other foci or the bacteria had through metastasis become firmly established in muscle or joint structures and removal of the primary focus of infection did not remove all the infection responsible. This does not make it less proper proceedure to remove any focus of infection that can be found and removed in such cases. The focus if allowed to remain will produce other damage besides rheumatism, therefore, should be removed.

In the later cases of cardio-vascular-renal disease it is proper to remove all foci of infection which can be removed and by so doing an arrest of the process may be secured but it is far better practice to clean up these foci in children and young adults not waiting until gall bladder, appendix, etc., are infected or until marked damage is done to heart, arteries and kidneys. But in practicing in this way one encounters much difficulty in getting people to see the advisability of even minor surgical proceedure. An infection in tonsils may not be known to parents of children but a child may have pyelitis secondary to such an infection. Pyelitis causes symptoms as a rule that are referred to the bladder and much difficulty may be encountered in getting parents to see the connection between bladder symptoms and infected tonsils.

Quite often they have well developed prejudice against surgical proceedure and assert that the creator put tonsils there for a purpose; therefore, they should not be removed. One who advises removal of tonsils as often as he sees a case in which removal is needed soon becomes known as a crank on the subject. Additional difficulty is encountered in this line of endeavor because many physicians are passing these cases by without advising surgery or rather advising against it saying that the infected tonsil is not doing any damage as yet. Some physicians give this advice honestly but others do it because they think it pleases the patient or relatives better than would advice for a surgical measure. These latter are men who are practicing principally with a pleasing personality, ability to mix well with the people and a desire to say that which pleases most at the time. They have little reason to fear that later developments will show their advice to have been wrong for ordinarily the patient or relatives will not connect the primary cause with late developments. They do not connect the late cardio-vascular-renal disease, etc., with infected tonsils which should have been removed 20 to 40 years previous. Even if they do the physician will have enjoyed their confidence for the 20 to 40 years that will have elapsed and profited thereby. So why should he worry. He is about ready to retire anyhow. Such men are the ones who agree with the grandmother saying, "Yes, I think you are right; the trouble is stomach and teeth." Perhaps it is

a case in which there is no leading symptom and about all the findings there are are fever and a sore gum where a tooth is about to erupt. If such be the case it is easy for a doctor to say the trouble is stomach and teeth and he can get by with the family with such a diagnosis. If he would examine the urine perhaps he would find bacteria and tonsils would show evidence of infection. Some of us do not go to the trouble to investigate such things and consequently remain as ignorant of the true condition as are the patient and relatives. Many a case of pyelitis has no diagnostic feature except a microscopic urine examination. The above outlines pretty accurately a case seen recently. The diagnosis is pyelitis secondary to infected tonsils. In this case a great deal of difficulty was encountered and it would have been easier to allow the case to drift along with no mention of need of a tonsil operation but removal of tonsils in this case doubtless would do away with the source of infection and recovery would follow in all probability especially if some good urinary antiseptic such as hexamethalyn were used for a few months following tonsil removal. This patient recovered nicely from this attack after about two weeks, but still carries the dangerous infection in tonsils.

It is easier to side step the issue in many such cases and allow people to carry foci of infection and die earlier than they should, but still singing your praises and paying you good money for worthless gargles and throat washes. It probably is quite often more profitable to do so for if you do not say that which pleases, another doctor can and most likely will be found who will learn what the patient or relatives want to hear and will say it for the sake of pleasing. Such doctors are more adept at learning what people like to hear and saying it than they are at learning the right way to practice medicine.

However, if one does his duty he will at least let people know the facts as far as possible; then if they choose to go on carrying these dangers it is their own business. I know of many who are doing this in spite of having been advised of the danger.

This makes no pretense at exhaustion of the subject but aims to recall some work we can do to give people longer life. We may prevent an abdominal operation by removing a tonsil or tooth at the proper time.

TREATMENT OF THE INSANE*

C. H. Anderson, M. D.,
Managing Officer, Anna, Ill., State Hospital
Anna, Ill.

The first approach to a patient should be kind and assuring. All fear and antagonism should be allayed. The patient should be caused to feel that they are among friends who will look after their needs with kindness and thoughtfulness.

The first service rendered a patient after admission is a warm bath and a shampoo. This will tend to allay nervousness and promote a period of rest. The patient is then placed in bed and made as comfortable as possible. A physic is then administered the patient. This is done to secure better elimination. The number who neglect proper elimination is quite surprising. Auto-intoxication from constipation plays an important role in the etiology of insanity. The importance of this factor has been unduly magnified by some surgeons who have claimed marvelous results from a colectomy or an excision of a section of the colon. The operation for colectomy is performed on the theory that a section of the colon becomes atonic, loses its vermicular motion and consequently becomes a storehouse of toxic material from which the entire system becomes poisoned.

From this it will be seen that the first attentions given a patient are rendered with a view of creating the impression that they are ill and have come to the hospital for the purpose of treatment and not to a quasi-penal institution. This impression serves as a proper background for all that is to follow.

Every patient should be brought to realize that they are ill and the hope of a cure should replace the feeling of despondency which dominates the mental picture of so many patients. Every service should be kindly, gently but firmly rendered. Kindness and gentleness robs them of the feeling of the stupendous loss of their immediate family circle. Firmness initiates the system of personal discipline so essential to future recovery. The patient should not feel too sensibly the loss of unnecessary ministrations of misguided and often foolish relatives. Much is to be gained by a complete separation of the patient from family and home surroundings. A new environment must be created in which the patient can start anew on

*Read at forty-eighth annual meeting of Southern Illinois Medical Association at Cairo, November 2, 1922.

the road to recovery. Old scenes must be left behind if not forgotten. Time must be given for thought and reflection.

Among the early services rendered is a careful and painstaking physical examination of all the organs of the body and if a physical derangement can be found which either promotes or serves as a basis for the mental derangement the highest art of the physician should be exerted in its correction. Elimination is carefully studied and if found inadequate every effort is made to improve it.

Early attention is given to the teeth and tonsils for the purpose of discovering any existing foci of infection from that source. Many cases could be recited that cleared up as soon as all diseased teeth were properly treated and all cases of pyorrhea and pus pockets eliminated. The value of oral hygiene cannot be overestimated. Dr. Cotton, superintendent of the Trenton State Hospital, claims brilliant results and has gained international fame by efforts to cure insanity by the elimination of foci of infection. He believes that focal infection is probably the most frequent of all causes of insanity. These foci may be located in the teeth, tonsils, sinuses, nasal fossae, uterus, kidneys, bowels and in many other organs of the body.

A routine Wassermann test is made on the blood and on the spinal fluid when indicated for the purpose of discovering a possible syphilitic infection. An approved method of treatment is given all patients suffering from syphilis or a parasyphilitic sequella.

All patients admitted to the hospital are placed in the diagnostic group until a careful examination both mental and physical is made and a correct classification is determined. Classification not only refers to the form of disease but to the mode of treatment. The classification as to the form of disease is mainly useful for statistical purposes only. The adoption of the therapeutic classification was one of the great innovations in the treatment of the insane in Illinois. By this system of classification all patients requiring a certain kind of treatment are grouped together. In this way individual care can most nearly be approximated.

Returning to the promotion of patients in the classification for treatment, all patients showing active mental derangement pass automatically from the diagnostic group to the acute mental. The acute mental cases are divided into two groups: One to which hydrotherapy is indicated and the other occupational therapy.

A reference here to the meaning and application of occupational therapy will be in order. Occupational therapy is the scientific application of occupation in the cure of disease. It should be prescribed with the same exactness in the correction of faulty mental and physical habits as drugs are prescribed for the cure of physical diseases.

The druggist is called upon to fill the prescription for drugs and so the occupational therapist is expected to act as technician in filling the prescription for occupational therapy.

Most every insane person has acquired some abnormal habit, either physical or mental. Some are depressed, retarded and inactive. Others are elated, active and divertable. Some are destructive, others irritable, and still others untidy. The above list of abnormalities could be extended indefinitely. The type of occupation prescribed is usually in terms of mechanical, intellectual, monotonous or varied employment.

The maniac cases usually improve most readily under the influence of mechanical employment. Retarded cases do best when assigned varied employment. The prescription is written with the idea of correcting an individual faulty habit. Patients may go directly from the diagnostic group to the infirm group either as infirm-bed, infirm-up or infirm tubercular cases. They may go directly from the diagnostic group to the Educational-Habit Training group. This group includes patients who are more or less deteriorated and have acquired some especially faulty habit, such as untidiness, destructiveness or habits of irritability. A piece of burlap may be given a destructive patient to ravel who has acquired the habit of spending the entire day tearing clothing or bedding. In this way the habit of raveling burlap may be substituted for the habit of tearing clothing. After this habit is well formed something more complicated and useful may be substituted. Patients who have acquired the habit of soiling their bedding and clothing by disregarding the promptings of nature should be taken to the toilet at regular intervals both day and night. The list of other pathological habits could be extended indefinitely. The application of occupa-

tion in the treatment of insanity is based on the theory of the substitution of a normal habit for a pathological one. The treatment of the insane is largely one of re-education.

Patients who are committed to the hospital before deterioration occurs often go immediately from the diagnostic group to the educational—occupational therapy group. Patients of this group are of a higher class than the former, consequently the form of occupation employed is more intricate and varied. The test of success in treatment is not measured by the work performed or the articles manufactured but rather the patient. The finished product is the patient.

The guiding rule in the treatment of patients in this class is that the product of their labor shall have no intrinsic value. This distinction is diligently maintained to prevent the occupational group from gradually merging into the vocational or industrial.

Patients in the vocational group are taught some useful vocation which may be followed for a livelihood after discharge from the hospital. Patients in the industrial group are employed in the laundry, bakery, kitchen, dairy, farm, garden and numerous other departments of the institution.

It will be seen from the foregoing that employment is the basis for the treatment of a majority of all admissions to the hospital.

THERE IS SUCH A THING AS AN ARISTOCRACY OF BRAINS

The President of Dartmouth College has asserted that too many men go to college; he deems it necessary to define the individuals to whom in justice to the public good, the privilege shall be extended, and to specify those from whom the privilege should be withheld. He believes there is such a thing as an aristocracy of brains, made of men intellectually alert and intellectually eager, to whom increasingly the opportunities of higher education ought to be restricted.

WHY THEY MISSED FAME

Lots of men would leave their footprints
Time's eternal sands to grace
Had they gotten mother's slipper
At the proper time and place.

—Atlanta Constitution.

Society Proceedings

CHRISTIAN COUNTY

At a meeting of the Christian County Medical Society held in this city on the evening of January 16 the following officers were elected:

President, Dr. C. M. Seaton, Morrisonville; vice-president, Dr. F. A. Martin, Pana; secretary-treasurer, Dr. D. D. Barr, Taylorville; delegate, Dr. G. L. Armstrong, Taylorville; alternate, Dr. T. A. Lawler, Taylorville; member legal committee, Dr. J. N. Nelms, Taylorville; members public health committee, Dr. J. H. Miller, Pana, and Dr. W. H. Mercer, Taylorville.

Censors: Dr. T. A. Lawler, Dr. W. H. Mercer, and Dr. J. N. Nelms, all of Taylorville.

Our meting was the best we have had for four years and the spirit of business activity freely flowed and there is a fine prospect for the future.

D. D. Barr, Sec.

COOK COUNTY

CHICAGO MEDICAL SOCIETY

Special Meeting, January 10, 1923.

Memorial to William Edward Quine, President of the Society, 1872.

President Hugh N. MacKechnie in the Chair.

Biographical Sketch—Dr. Wm. Allen Pusey.

The Physician and Teacher—Dr. Frank Billings.

A Friend to Women—Dr. Alice Lindsay Wynekoop.

As I Knew Him—Bishop Jospeh Hartzell.

The Man—Mr. John T. Richards.

Joint Meeting of the Chicago Medical Society and Chicago Roentgen Society, January 17, 1923.

1. "Sinus Disease and Lung Infection"—Kennon Dunham, Cincinnati, Ohio.

   Discussion—Austin A. Hayden, John A. Cavanaugh, Joseph C. Beck.

2. "The Diagnosis of Intracranial Tumors by Ventriculography"—Walter E. Dandy, Baltimore, Md.

   Discussion—Cassius C. Rogers, Allen B. Kanavel, Geo. Davenport.

Regular Meeting, January 24, 1923.

1. Ancient and Modern Medicine in China—Ed. H. Hume, Dean of the College of Medicine of Yale in China.

2. Fundus Changes in the Eye in Cardio-Vascular Diseases—Wm. H. Wilder.

   Discussion—Oscar Dodd.

3. Cardio-Dynamics of Arterial Hypertension—Arthur R. Elliott.

Regular Meeting, January 31, 1923.

1. Proposed Activities if Sheppard-Towner Funds Are Made Available—Isaac D. Rawlings, Director of Public Health, Springfield, Ill.

2. The Sheppard-Towner Act—Wm. D. Chapman, Silvis, Ill.

Discussion—Mrs. Kenneth F. Rich, Charles J. Whalen, Mrs. Ira Couch Wood, Ed. H. Ochsner.

CHICAGO OPHTHALMOLOGICAL SOCIETY

February 20, 1922.

Dr. Frank E. Brawley in the Chair.

RETINITIS PIGMENTOSA?

Dr. Michael Goldenburg reported the case of Mrs. L. B., colored, age 38, who stated that she had no eye trouble in youth or at any time until October, 1917, when her left eye was struck by a piece of wood. This eye was enucleated in December, 1917. About three weeks after the accident to the left eye she began to have severe frontal headaches, marked photophobia; various colors appearing before the right eye. At the time of the accident patient went unattended, but within five weeks after the accident she required some one to accompany her, not because she was unable to make her way along the streets, but because when she arrived at the doctor's office she had to enter through a small dark hallway. She was unable to make her way through this hall, and when she entered the office she was unable to find a chair. Patient cannot give any information as to consanguineous marriages. At the time of enucleation of the left eye the vision of the right eye was very poor, everything appearing blurred even in the presence of good illumination. About three months after the enucleation vision in the right eye started to improve and soon she was able to distinguish objects, and to thread a needle under good illumination. There was not much change in vision from this time up to the time of entrance into the hospital.

In the hospital it was found that she had a four plus Wassermann.

On admission she had tubular vision 20/20, Ophthalmoscopic findings: Disc fairly well defined, small crescent of pigment on temporal side of disc, disc appeared pinkish, lamina cribrosa not visible, shallow physiologic cup. Arteries markedly contracted and straight. Typical bone corpuscle pigment in periphery, anterior to vessels. In several places the pigment follows the vessels in a straight line and anterior to them. Fundus tesselated; no atrophy or arterio-sclerosis of choroidal vessels apparent. Perimetry disclosed a contraction to 10 degrees. Refraction: small error, not improved by glasses.

His only object in presenting this case was that he had never seen a case of retinitis pigmentosa in a colored person before and thought it worth while reporting.

DISCUSSION

Dr. Harry S. Gradle asked whether the case might not be one of luetic retino-choroiditis instead of retinitis pigmentosa.

Dr. Goldenburg replied that the patient was getting a regular course of antisyphilitic treatment. He had seen two cases in which there was some question as to whether it was retinitis pigmentosa or syphilis. In these cases he found some parts of the field with pigment of a darker character. It did not assume the feathery arrangement seen in retinitis pigmentosa as in this particular case.

Dr. George F. Suker did not believe there was a case of retinitis pigmentosa reported in the literature where the disease started at the age of this individual. Retinitis pigmentosa began early in life; it might go on for years without manifesting any symptoms to speak of but eventually there would be symptomatology of one form or another. Vision might remain absolutely normal for years, but sooner or later there would be a dimming and marked contraction of the field of vision. It was not necessary in retinitis pigmentosa to have the pigment symmetrically distributed throughout the periphery of the retina. It may even at first be limited to nasal or temporal half of the retina for many years, but eventually it will involve the other half also.

In this particular case he thought the element of syphilis was a strong possible feature, and then the case would not be one of true retinitis pigmentosa, but a retinitis, syphilitica pigmentosa, pure and simple, giving the same characteristics of poor night vision as in a true retinitis pigmentosa. Furthermore, the pigment spots would later on, or even now, assume the bone corpuscle outlines, the same characteristics as one saw in retinitis pigmentosa. Another difference between this case and retinitis pigmentosa was that this nerve head was not a waxy yellow with an evident neuritis but presented a clear-cut optic atrophy picture, as seen secondary to lues. Retinitis pigmentosa was a retinal lesion, pure and simple, while in this case there was already considerable choroidal involvement, much more so than obtained in a classic retinitis pigmentosa. So far as the symptomatology and the visual fields were concerned, they were practically the same in the two diseases, but the pathology was quite different.

Dr. Robert von der Heydt stated that he had had an opportunity to study this case with the large Gullstrand binocular ophthalmoscope. The lesions he saw were absolutely confined to the retina and their depth was beautifully shown stereoscopically.

Dr. Thomas Faith suggested the patient might have had monocular vision before one eye was lost.

Dr. Goldenburg said the patient did not know her vision was bad until this eye was destroyed. She gave a history of having poor vision in the eye for sometime past. He thought there was no question about the case being one of retinitis pigmentosa. In colored people the nerve head could not show up as typically as in a Caucasian. This was due to contrast. The proliferation of the pigmented was secondary to atrophy of the chorio-capillaris and destruction of the tissues anterior to this layer. The proliferation took place around the equator and as the condition progressed, it extended on toward the nerve head. In a syphilitic case one did not get the tubular vision as in this case and did not get the marked straightening out of the vessels. His own interest in this case was that it occurred in a colored individual and he had never seen it before. If the case were luetic, he presumed active antileutic treatment would be of material benefit.

Dr. Harry S. Gradle thought it would be well to hold the diagnosis of retinitis pigmentosa in abeyance until it was seen how the patient progressed under antileutic treatment.

NEOSALVARSAN FOR TOXIC AMBLYOPIA

Dr. Cottle reported the following cases for Dr. G. F. Suker: A. S., gave a history of a moonshine debauch following which he became blind, and remained the same for two months when he entered the hospital.

At this time his vision was 3/200, discs definitely pale, and form fields constricted. There was also a well marked central scotoma for red. Patient had a chancre twelve years previously, but no other specific history, nor one of antiseptic treatment.

Wassermann tests on blood and spinal fluids were negative. The patient was put on K. I. and daily sweats. For over seven weeks this was done, at which time the vision was still the same.

On January 27, 1922, the patient was given 0.3 grains of neosalvarsan intravenously. Two days later the vision was 15/200 and 10/100. The patient also noted that he could see finer print. One week later another injection was given. Four days later the vision was 19/200, and two days after this 20/200. On February 14 an injection of 0.6 was given, and two days later the vision was 20/200 (10/70 7/50). This is the condition at the time of writing.

M. Z., gave a history of excessive indulgence in alcohol and tobacco, and one night he went on a spree and within thirty-six hours was unable to see any more than large objects a few feet in front of him. For eight months this condition prevailed, with but very slight improvement. He then entered the hospital.

His vision on entrance was R. E. 15/200; L. E. 20/200. The temporal sides of the discs were definitely pale. There was a central scotoma for red without much construction of the form fields. Serologically the patient was repeatedly negative, and for ten days under close observation in the hospital no change in vision was observed. Neosalvarsan 0.3 grams was injected intravenously. At this time there was started a daily injection of strychnin, which was the only other medication given. One week after the first, another injection was given, which was followed in five days by an improvement in vision in the left eye to 20/30. After another injection, one week later, the vision in the right eye was improved to 20/100.

DISCUSSION

Dr. Suker stated: The question was why, in three cases—and a fourth one under observation—neosalvarsan or arsenical preparations accomplished so much good. Of the three cases, the third one was a soldier in whose case repeated spinal punctures were made. Methyl alcohol poisoning caused a ventricular and spinal hydredema; and, in the first few hours of a retrohulhar neuritis, there was not manifested any particular change in the disc, except a slight elevation of the disc edge, particularly on the nasal side. This entricular and spinal-canal hydredema disappeared usually within forty-eight to seventy-two hours and then the optic disc picture ensued. There was really a moderate evanescent pressure edema of the nerve which was followed hy the retrohulhar neuritis.

The beneficial results obtained in these cases depend on two factors. First, the relief of pressure hy repeated spinal punctures; second, the seemingly chemical antidote of the arsenic and as a nerve stimulant. Whether it was an antireacting agent was a difficult matter to determine; nevertheless, the fact was that neosalvarsan and other arsenics did considerahle good. These patients were in the hospital for several weeks hefore anything was done for them other than spinal drainage as reported. Many serologic examinations were made, all proving negative. These patients did not receive ordinary pilocarpin sweatings and usual treatment, hut the spinal canal was drained almost dry on several occasions and the arsenicals used. He suggested a trial of these preparations and drainage of the spinal canal in similar cases. The vision of these patients was now apparently stationary and the disca did not show any further atrophy as shown hy maintaining a constant visual field.

TUMOR OF CONJUNCTIVA AND SUBJACENT TISSUE

Dr. Robert Blue presented the case of a young man in the early twenties, with a tumor of the right bulb of an unusual type. This tumor was situated beneath the bulbar conjunctiva, slightly elevated. sharply defined, and highly vascular. It did not extend into the cornea, but was confined strictly to the conjunctiva and subjacent tissue.

The history was that some twenty months before the patient discovered a growth in the eye without any irritation whatever. He had observed the case for eight months. During that time the tumor had not increased in size. The diagnosis was a benign neoplasm of unknown nature.

LEFT HOMONYMOUS HEMIANOPSIA

Dr. Edward F. Garraghan presented the case of a man, single, sailor by occupation, who had been a rather heavy drinker. He first saw him about the 15th of November, 1921, during an attack of pneumonia. At that time the vision was blurred, but this condition gradually cleared up entirely. Two months. later the patient noticed that objects on his left side were lost to view, and he found difficulty in walking because he could not see to his left. On examination his vision was 20/20 in each eye. There was no paralysis of any of the external ocular muscles. The fundi of both eyes were negative. The field showed complete blindness of the temporal half of the right eye and the nasal half of the left eye. It was a typical case of left homonymous hemianopsia. Patient gave a history of a luetic lesion about twenty years ago. He gave a four plus Wassermann reaction, the Wernicke sign was present, and the lesion was, therefore, most likely confined to the optic tract.

INCREASED INTRAOCULAR TENSION

Dr. Thomas Faith read the paper reporting clinical observations on this subject.

DISCUSSION

Dr. William A. Fisher stated that the essayist had cited cases where miotics had heen given hy ophthalmologists of good repute, where he would have given mydriatics. Plus tension, without any eye pathology that could he seen, required miotics and a search for the cause. Plus tension with a cause that could he seen required a mydriatic and the removal of the cause.

All of Dr. Faith's reported cases would have heen given the same treatment he gave them, if he had followed this procedure. His first case, plus tension, traumatic cataract, required atropin, hut it might have heen quite as well had he also removed the lens which was causing the plus tension.

Within the year, he had had a case of tension in each eye of 54 with 20/25 vision, where eye pathology could not he found; pilocarpin was instilled, enemas given and six teeth extracted, two at a time ten days apart. When the gums had healed, enemas and pilocarpin were discontinued. Tension remained normal and vision improved to 20/15 plus.

Another case of tension 60, vision in each eye 20/200. Eye pathology could not he found. The teeth, tonsils and sinuses were normal. Miotics and enemas were given and tension returned to normal, and vision 20/25 in the left eye hut 20/200 in the right which had an old scar. This case was seen hy

one of the members of the society who advised an immediate operation.

Dr. Fisher believed that many cases of plus tension would escape an operation if the teeth, tonsils, sinuses, alimentary canal and blood were treated when necessary, and miotics or mydriatics used as indicated.

Dr. Harry S. Gradle said: Dr. Faith's paper was timely, because many cases of plus tension due to mechanical causes were overlooked, in the eagerness of a search for glaucoma. In these cases there was more or less mechanical obstruction of the canal of Schlemm. One might not be able to see it in the early stages, but sooner or later it would appear. These cases were particularly apt to be found in younger people. He recalled to mind two young women, 20 and 22 years old respectively, in whom plus tension developed as a sequence of cyclitis, proved to be of tubercular origin. In some of these cases it was impossible to reduce the tension, and operation became necessary to establish a free outlet to the anterior chamber. One could make a diagnosis practically in all cases by a careful examination of the anterior aspect of the eye for evidences of exudation manifesting themselves on the posterior surface of the cornea.

In many of these cases one could bring the tension down to normal by the injection of 1/1000 adrenalin underneath the conjunctiva.

Dr. Frank E. Brawley mentioned a case of simple chronic glaucoma, seen in consultation, with a small synechia. There was no way of telling when this occurred. The glaucoma had lasted for several weeks at the time he saw the case. Dilatation was effected under cocain, but after twenty-four hours miotics had to be resumed. The case went on to enlargement of the fields and quiescence under the miotics.

Dr. Faith agreed with Dr. Gradle that many of these cases were instances of mechanical obstruction. He reported a case he had watched carefully for weeks, but did not mention it in his paper, in which iridectomy was done with the idea that he had a primary glaucoma to deal with. Tension was reduced temporarily but came up again. He searched for foci of infection and removed them as well as he could. There was no exudation until several weeks after the tension had come down to normal. What brought the tension down he believed was the improvement in general health and giving the patient a mixed stock vaccine. Then he saw shreds of exudate posterior to the ciliary body, but up to that time he could not see anything that looked like it. Where one would miss the exudates with the ordinary loupe and ophthalmoscope, he might be able to see them readily with improved methods of examination, as with the slitlamp.

COMPARATIVE ANATOMY OF THE EYE

Dr. George E. Keiper of Lafayette, Indiana (by invitation), read a paper on this subject illustrated by stereopticon slides showing various types of eye from the simple eye spot to the eye of man and especially of the bird, as the most perfect organ.

Dr. Robert Von Der Heydt,
Corresponding Secretary.

THE CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY

The regular monthly meeting of the Chicago Laryngological and Otological Society was held at the Hotel Sherman on Monday evening, March 6, 1922.

The President, Dr. Robert Sonnenschein, in the Chair.

ABSTRACT

Presentation of Cases and Specimens:

Dr. Joseph C. Beck presented a pathological specimen of a lipoma of the laryngo-pharynx, removed from a boy of sixteen. The tumor of the larynx had been present for more than a year and had reached the pyriform fossa. The glands were not involved; the tumor was soft and not painful. The mucous membrane over it moved quite readily and there was no pulsation. The trachea was enlarged but only a droplet of material could be forced out and that showed evidences of fat. Microscopic examination revealed a true lipoma. Three needles of radium were inserted, without effect, which verified the usual findings, that lipomata are not affected by radiotherapy.

A year later the patient returned with the growth considerably sunken down and the history of loud breathing and snoring during sleep. The growth was then enucleated under synergistic anesthesia, by the suspension laryngoscopy method.

DISCUSSION

Dr. J. Holinger asked the relation of the tumor to the tonsil and to the Eustachian tube.

Dr. Beck stated that the growth was back of the posterior pillar and did not extend beyond the margin of the soft palate. It was entirely from the nasal fossa.

Dr. C. M. Robertson reported the case of a patient who had come to him with stenosis from a laryngeal growth. Some forty-off fatty tumors over various portions of the body were found and one about the size of that removed by Dr. Beck was in the buccal cavity. Laryngeal examination showed a mass occupying the right side of the larynx. It did not look like a carcinoma and a lipoma was suspected. Dyspnea was so pronounced that a preliminary tracheotomy was necessary and before they could prepare for an evisceration of the larynx the patient succumbed. Portmortem examination showed that the growth in the throat was a true carcinoma, although the other tumors in various parts of the body were lipomata.

Dr. Albert H. Andrews read a paper on "Surgery of the Ethmoid Labyrinth."

ABSTRACT

Dr. Andrews stated that it was not his purpose to present anything new or startling in the field of ethmoid surgery, but, first, to protest against the unnecessary sacrifice of the middle turbinate body and, second to call attention to the method (not new) of draining and ventilating the ethmoids.

Several years ago the writer pointed out the tendency to maxillary antrum disease following the removal of the middle turbinate, and experience through the years has strengthened the belief that one of the functions of the middle turbinate is to protect the antrum, probably by leading discharge from the frontal sinus and anterior ethmoid cells away from the antrum and to cause the discharge to drop free into the nasal cavity. Another function of the middle turbinate is to direct part of the air current past the ostium maxillare in such a way that it will rarify and condense the air in the antrum with each inspiration and expiration.

That the middle turbinate and the ethmoid cells have a function in maintaining a proper lumen of the nostril is indicated by the fact that after removal the patient usually finds himself unable to prevent the discharge accumulating in the area once occupied by these structures. Continued crust formation is a common sequel. The discharge in this locality harbors and favors the development of micro-

organisms which frequently invade the adjacent cavities, the frontal, maxillary and sphenoid sinuses.

The writer has no doubt that diseased turbinates may sometimes cause disease of the ethmoid cells and it was his practice formerly to remove the turbinate in the hope that the diseased ethmoids might recover. Later it has seemed that diseased ethmoids have been the frequent cause of diseased turbinates and the plan has been to operate upon the ethmoids in order that the middle turbinate might recover. It is frequently necessary to swing the turbinate away from the lateral wall in order to get at the ethmoids. Under thorough cocainization this is neither difficult nor painful. The instrument used in exenterating the ethmoid cells is the Knight's biting forcep. The instrument is opened about a third of an inch and while the shaft is pressed over against the septum the blades are introduced under the middle turbinate against the bulla ethmoidalis. Then with a gentle rocking motion the blades are pushed into the ethmoid labyrinth as deep as the cupped part of the blade (about three-quarters of an inch). The forcep is then closed and the tissue caught between the blades is removed. The forcep is inserted again, this time with the upper blade in the cavity made by the first bite and the lower blade below the floor of the ethmoid labyrinth. The instrument is pushed back almost to the anterior border of the sphenoid, the forcep is closed and the tissue caught between the blades is removed. Ventilation and drainage has now been provided for both the anterior and posterior cells, except possibly a few anterior cells about the naso-frontal duct.

The advantages of the operation are:

1: The ease with which the operation can be performed under local anesthesia.

2: The safety of the operation when the operator has a fair knowledge of the anatomy of the parts involved.

3: The thoroughness with which this comparatively simple operation exenterates the ethmoid labyrinth as shown on the cadavor.

4: The after-results show no tendency to crust formation or other undesirable conditions. In examining some of the patients years after they were operated upon by this method no history of recurrence could be obtained and the only evidence that the patient has ever had ethmoid disease was the finding of an open space when the probe was inserted under the turbinate.

The dangers of operating are:

1: To the eye through the orbital wall, the lamine, papyracea. With ordinary care, without unusual force, and by keeping the instrument perpendicular this accident should be easily avoided.

2: To the cranial cavity through the orobriform plate and the horizontal plate of the frontal bone. If the directions are followed as to depth of inserting the blades this accident cannot occur.

3: That the operation will not be thorough enough to effect a cure. Ventilation with the least possible interference with function is the object sought. Unless there is extensive necrosis the probabilities are that if this operation fails, the more extensive operations would also fail. Should this operation fail more extensive work can be undertaken at any time. It is well to remember, however, that it is always easier to take out more tissue if necessary, than it is to put back what has been removed.

DISCUSSION

Dr. C. M. Robertson agreed with Dr. Andrews concerning the anterior ethmoid cells and preservation of the turbinate, and said he did same operation by a little different technic. After the labyrinth is cleaned he comes forward to get the anterior ethmoidal cells and then fractures the ethmoidal plate outward.

One case of pan-sinusitus, operated five or six years ago, was particularly interesting. In that case the ethmoidal was pushed over a fourth of an inch and after the fracture of the bony plate the resiliency of the vertical plate of the septum brought it back into a normal position. He considered this the most satisfactory case he had seen, as there is now a normal turbinate carrying out the physiological function, occupying its normal position with the ethmoidal space on the outside wall of the nose.

(To be continued in March issue)

LEE COUNTY

The Lee County Medical Society held its annual meeting at the City Hall in Dixon, January 9, 1923, at 2 o'clock P. M.

The meeting was well attended by members of Lee, Ogle, Whiteside and LaSalle counties. Dr. Ralph C. Hamill of Chicago gave a very practical talk on the "Psychoneuroses." Dr. Harry M. Hedge of Chicago delivered an address on "Practical Dermatology," and Dr. Willard Thompson of Dixon read an interesting paper on "Vertigo." These papers were all well received and the discussions were unusually interesting.

Dinner was served at the Nachusa Tavern at 12:30. After the scientific program, the usual business of the annual meeting was transacted.

The officers for 1923 are as follows: president, Dr. T. O. Edgar, Dixon; vice-president, Dr. J. H. Dale, Ashton; secretary and treasurer, Dr. E. C. White, West Brooklyn.

T. F. Dornblaser, Past President.

Marriages

Fuller Bryan Bailey to Miss Maybelle Carolyn Zimmer, both of Chicago, January 6.

Martin Robert Broman to Dr. Mildred Jessie Roberts, both of Chicago, December 28.

John Milton Dodson, Chicago to Mrs. Mary Hyde Webb of Detroit, January 17.

Helmer Engh, Gillespie, Ill., to Miss Helen Runnestrand of Hettick, Wis., November 30.

John Maurice Hayes, Decatur, to Miss

Helen D. Hogan of Assumption, at Assumption, October 25.

John C. Kassmeyer, East Dubuque, Ill., to Miss Lillion May Minges of Dubuque, Iowa, at Oak Park, recently.

James Herbert Mitchell to Miss Marion Strobel, both of Chicago, December 6.

Personals

Dr. Joseph Welfeld, Chicago, held a skin and urologic clinic before the Kane County Medical Society at Elgin, recently.

Dr. Robert C. Timms has resigned from the city health department, following five years' service.

Dr. Joseph L. Miller, Rush Medical College, spoke on "Protein Metabolism" before the Elgin Physicians' Club, Elgin, December 18.

Dr. Duncan D. Campbell, on the staff of the Chicago State Hospital, has been appointed by the Missouri State Eleemosynary Board as superintendent of Hospital No. 2, St. Joseph, Mo., to succeed Dr. Aden C. Vickrey, who recently resigned.

Drs. Franklin H. Martin, Emil G. Beck, Arthur D. Black, Truman W. Brophy, Frank E. David, Ernest J. Ford, Junius C. Hoag, Effie L. Lobdell, Albert J. Ochsner and Henry Schmitz will leave February 10 for an extended tour of South America.

Dr. Frank C. Mann, Rochester, Minn., gave an address on "The Experimental Production of Peptic Ulcer" at the regular meeting of the faculty of the Laboratory of Surgical Technique of Chicago, January 26.

Dr. and Mrs. Fred Wade Jones, of Alton, motored to Homestead, Florida, to visit relatives. They went via Washington, D. C., and will be gone several months.

Dr. George B. Schwatgen of Aurora was seriously hurt January 15 when his automobile was struck by an Aurora and Elgin electric train in Aurora.

Dr. Franklin A. Turner has been appointed director of hygiene of the Rockford public schools to succeed Dr. Dudley W. Day, who has resigned.

Dr. Albert Willis, Christopher, was acquitted of the charge of having caused the death of Miss Mary Shifflett of Leroy, it is reported.

Dr. and Mrs. J. D. Chittum, of Sorento, Ill., left January 10, in an automobile for Vero, Fla. They expect to go to Washington, D. C., first and then south to Florida where they expect to spend several weeks in Palm Beach, Miami and Tampa.

Dr. W. E. Shastid of Pittsfield, second vice-president of the State Society, is making a tour around the world and expects to get home next summer.

News Notes

—Dr. J. R. Neal, chairman of Legislative Committee of the State Society, issued Bulletin No. 1, giving a digest of legislative matters including a synopsis of bills of interest to the profession now before the General Assembly, Jan. 20. Any members interested can have these bulletins as issued by writing to Dr. J. R. Neal, Box 748, Springfield.

—It is reported that Dr. Carl A. Starck of Palatine was fined $200 and costs for violating quarantine regulations. The specific charge against Dr. Starck was for terminating the quarantine of a diphtheria patient on his own initiative, without reference to local health authorities and in violation of the state regulations. The charges, which were the second of the kind within sixty days, were brought at the request of field men attached to the state department of public health.

—Friends of the late Dr. William E. Quine will treasure the Bulletin of the Chicago Medical Society of January 20 containing the eloquent address at the memorial meeting of the Society.

—The Kankakee County Medical Society pulled off a play written by Dr. Arthur H. Gollmar, December 29. The title "The Mirror Behind the Bar" or "A Glandular Extract From the Common Law," indicates that it was hot stuff. It was a parody involving prominent members of the medical and legal professions. Dr. Gollmar as judge presided over a trial of a suit by "Dr. Endocrine" to recover a fee of $500 for a "glandular" operation. The subject offered an open season for both medical and legal wit and humor and was greatly enjoyed.

—At the meeting of the Society of Medical History, Chicago, January 12, papers were presented by Dr. Peter Bassoe on "Early History of

Neurology and Psychiatry in the Middle West," and by Dr. A. S. Warthin, Ann Arbor, Mich., on "Noah Webster as an Epidemiologist."

—It was announced at the annual meeting of the Chicago Dental Society, January 20, that a children's free dental clinic will be opened within ninety days at the Cook County Hospital in a building formerly used as a measles quarantine station, with funds from the Pageant of Progress Exhibition. It was also announced that $3,000,000 had been given by an anonymous Chicagoan to found and maintain a large dental clinic.

—The chief sanitary engineer of the department of public health recently met with the officers of the Fox River and Lakes Improvement Association, to complete plans for making the waters of the upper Fox River and Lakes safe for bathing purposes. Property owners concerned and members of the association will be advised to comply with sanitary regulations recommended by the department.

—Chicago physicians gave a banquet in honor of Dr. Royal S. Copeland, health commissioner of New York City, January 9, at the Chicago Athletic Club. Dr. P. J. H. Farrell was toastmaster. Dr. Copeland spoke on the immigration peril and advocated examination on the other side—moral, mental and physical—and allocation, so far as possible, according to industrial or professional preparation. Dr. Charles E. Humiston, former president of the Illinois State Medical Society, and Dr. John Dill Robertson, formerly city health commissioner, also gave addresses.

—New infant welfare stations were opened during December at Freeport, Wilmington and Steger. At Freeport, the station will be maintained by the Amity Society, the clinics being conducted by Dr. J. A. Poling, city health officer. At Wilmington and Steger, the centers were established through the efforts of the county nurse and superintendent of schools, and the clinics will be conducted by members of the local medical societies. Dr. Elizabeth B. Ball, pediotrician, attached to the state department of public health, directed the opening of the station and the first clinic at each place, her services having been requested by the local agencies concerned.

—Dr. and Mrs. E. W. Fiegenbaum and Dr. and Mrs. W. H. C. Smith and son, Theodore, departed on January 15th on a trip around the world. They will be gone six months. The *Madison County Doctor* wishes "bon voyage" to Dr. E. W. Fiegenbaum as follows:

"After forty-seven years of unremitting toil in alleviating human suffering, and unselfish and untiring devotion to the interests of his profession, during which time he graced the highest office in the gift of the profession of Illinois and at the same time faithfully cared for this little journal, the Chief is at last taking a well deserved rest.

"That Europe may profit by his presence; that Fujiyama may inspire him; that Cheops and the Sphinx may look down more kindly on him than on any who have stood in their shadow; and that finally he may be glad to return to us, is our parting wish."

WORKMAN'S INSURANCE IN GERMANY A FAILURE

Dr. Friedensburg, for a period of twenty years prior to 1911 the president of the Senate of the Imperial Insurance Office of Germany, has given his views upon the practical results of workingmen's insurance in that country, and they constitute virtually an indictment of the system. Some one, in summarizing the series of charges, made by Dr. Friedensburg, points out the three most significant as follows:

"The first is that the state insurance, specially designed to replace pauperism and charity, is itself merely pauperism under another form. The second charge is that it has fostered to an incredible extent the German evil of bureaucratic formalism. The third and the worst charge is that it has become a hotbed of fraud, and therefore a spreader of demoralizing practices and ways of thought."

Deaths

Walter Stanley Haines, Chicago, beloved teacher in Rush Medical College since 1876, died, January 27, in the Presbyterian Hospital, from bronchiestasis and chronic nephritis. Dr. Haines was born Sept. 27, 1850, in Chicago. His father, John G. Haines was twice mayor of the city. After graduation from the Chicago High School, the young student went to Ann Arbor with his father who wished him to enter the University of Michigan. After a very brief visit there he attended the Massachusetts Institute of Technology from 1869 to 1871. At that time he contracted pleurisy and a bronchial inflammation which rendered him an invalid at frequent intervals for life. He held the chair of chemistry in the Chicago Medical College from 1872 to

1876, being graduated from the same college in 1873. He held an internship in Mercy Hospital following graduation and spent several months in Europe in study.

In 1876 he succeeded Dr. Henry M. Lyman as professor of chemistry in Rush Medical College, a position he adorned with unsurpassed learning and a faculty of clarifying the difficult subject that few teachers could approach. It was the usual experience of students from other schools who had labored memorizing endless "equations" that his clear analysis changed chemistry for them from a difficult "blind" subject to a pleasant and profitable one. His kindness and almost feminine gentleness endeared him to fifty classes of students, and as a member of the faculty his influence moderated the asperities during many strenuous years.

Always a leader in elevating the standards of medical education, he with the late Dr. E. Fletcher Ingals took a prominent part in placing Rush in the forefront of medical institutions. A recognized authority in chemical science he was a member of the committee of revision of the United States Pharmocopeia from 1900 to 1920. He was a member of the Illinois State Food Standard Commission since 1909, and was a member of the American Chemical Society and the Chemical Society of London.

He was joint author with Frederick Peterson of a standard text-book on "Legal Medicine and Toxicology," which appeared in 1904 and passed through several editions. An expert in toxicology, both as analyst and legal witness, he was in demand in some of the most celebrated cases known to the legal profession. Few of his classes enjoyed his lectures without interruption during the college year either by sickness or demands upon his time as an expert.

In 1916, the Rush alumni presented the college with a portrait of Dr. Haines by Nyholm and at the same time raised a Haines fund for the college. Last year the graduating class placed a tablet in his honor in the ampitheater and the Walter S. Haines fund was established for the college library in which he had long taken an active interest.

Dr. Haines never married. He was devoted to his science. In the later years his students somewhat irreverently, but with deep filial affection, called him "Daddy" Haines, thus reflecting his distress when (if ever) he found it necessary to pluck a student.

With the exception of Dr. Norman Bridge, Dr. Haines was the only survivor in recent years of the Rush senior faculty of the years 1870-1880, several of his colleagues dying in the prime of life, though a fatal prognosis of his severe sieges of sickness was made many times.

Frederick W. Beilstein, Chicago; Northwestern University Medical School, Chicago, 1900; member of the Illinois State Medical Society; aged 45; died, January 17, at the Wesley Memorial Hospital, from peritonitis.

Edmund A. Boas, Chicago; Rush Medical College, Chicago, 1884; member of the Illinois State Medical Society; aged 60; died January 17, from chronic nephritis.

William Viney Clark, Springfield, Ill.; St. Louis College of Physicians and Surgeons, St. Louis, 1908; a Fellow A. M. A.; aged 51; died, December 19, from a fracture of the skull when he was struck by a train.

Albert L. Converse, Springfield, Ill.; Chicago Medical College, 1864; for two terms member of the state legislature; chairman of the board of supervisors; aged 80; died, December 7.

Katherine W. Corcoran, Chicago; College of Physicians and Surgeons, Chicago, 1902; a Fellow A. M. A.; aged 52; died, January 17, at the West Side Hospital, from diabetes mellitus.

Stephen W. Cox, Chicago; Rush Medical College, Chicago, 1889; aged 65; died, December 24, from valvular heart disease.

Benton Brengleman Dunn, Perry, Ill.; Rush Medical College, Chicago, 1891; served in the M. C., U. S. Army, during the World War; aged 54; died in December, from appendicitis.

John Joseph Egan, Chicago; College of Physicians and Surgeons, Chicago, 1905; a Fellow A. M. A.; aged 44; died, January 11, from angina pectoris.

Julius Gruenewald, Glasgow, Ill.; Missouri Medical College, St. Louis, 1891; aged 65; died, December 30, from pneumonia.

Curtis Allen Lambert, Chicago; Miami Medical College, Cincinnati, 1871; aged 76; died, December 28, from acute indigestion.

Henry Richings, Rockford, Ill.; Medical Department of the University of the City of New York, 1864; a Fellow A. M. A.; Civil War veteran; formerly member of the state board of health; at one time on the staff of the Rockford Hospital; aged 82; died, December 12, from heart disease.

Robert Arnot Sempill, Chicago; College of Physicians and Surgeons, Chicago (University of Illinois), 1891; a Fellow A. M. A.; professor of dermatology, Loyola University School of Medicine, Chicago, and professor of dermatology and syphilology at the Chicago Polyclinic; served during the World War in the M. C., U. S. Army, with the rank of captain; died, December 19, aged 58, from acute dilatation of the heart.

William Philander Walker, Mason City, Ill.; Rush Medical College, Chicago, 1879; aged 66; died, December 11, from cerebral hemorrhage.

Charles A. Wilcox, Amboy, Ill.; Rush Medical College, Chicago, 1870; formerly mayor of Amboy; at one time postmaster of Ottawa, and coroner of LaSalle county; member of the board of education; for several years surgeon for the Illinois Central Railroad Company; aged 75 died December 23.

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Editorial

RESULTS OF FAITH HEALING?

Every physician is in possession of reliable information concerning cases treated by Christian Science methods wherein the results have been fatal. Many such cases have been of diseases which ordinarily yield to appropriate medical treatment. Cases of strangulated hernia and other forms of intestinal obstruction, appendicitis and other intra-abdominal infections and suppurations, diphtheria and other preventable diseases such as typhoid fever, smallpox and the like.

An investigation of this matter is being undertaken, and the members of the medical profession can be of the greatest assistance in the assembling of the facts about the methods and results of the faith healers.

A suggestive questionnaire is herewith published. Under "remarks" additional details should be given. Reports will be considered confidential.

Name of patient.....Age.....Sex.....
P. O. Address.....
Diagnosis .....
Date of illness, beginning.....ending.....
Autopsy? .....
Coroner's case? .....
Name of "healer".....
If physician was called, condition of patient when first seen .....
Remarks .....

Signed.....M. D.

Where and when graduated.

(Kindly mail reports to—

CHAS. E. HUMISTON, M. D.,
449 N. Central Ave., Chicago, Ill.)

RURAL PHYSICIAN WANTED

A physician is wanted in Rockwood, Illinois, Randolph County. For particulars write to Mrs. H. D. Reid, Rockwood, Illinois.

WANTED: BACK NUMBER OF THE JOURNAL

We have repeated requests for the April, 1921, issue of the JOURNAL. No doubt several physicians have kept back numbers of the JOURNAL and to those who have no further use for the issue mentioned the Editor will be quite willing to pay 20 cents per issue.

COPY OF THE SHEPPARD-TOWNER BILL AS FINALLY AMENDED

Comment by the Editor: The office of the Editor is deluged with requests for information relative to the provisions of the Sheppard-Towner Act. Every Doctor in the State was mailed a copy of the proposed bill during the time it was on hearing before the Committee on Inter-State and Foreign Commerce. The provisions of the Bill were also published in the JOURNAL and finally when the Bill was enacted the comment on the amendments appeared in the JOURNAL. For the benefit of those who have lost the copy sent them and who have mislaid the copy of the JOURNAL containing mention of the amendment we reproduce in this issue the Bill as finally amended, also comment on the amendments.

IN THE HOUSE OF REPRESENTATIVES

NOVEMBER 14, 1921

Reported with amendments, committed to the Committee of the Whole House on the state of the Union, and ordered to be printed.

AN ACT

For the public protection of maternity and infancy and providing a method of cooperation between the Government of the United States and the several States.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

That there is hereby authorized to be appropriated annually, out of any money in the Treasury not otherwise appropriated, the sums specified in Section 2 of this Act, to be paid to the several States for the purpose of cooperating with them in promoting the welfare and hygiene of maternity and infancy as hereinafter provided.

Sec. 2. For the purpose of carrying out the provisions of this Act, there is authorized to be appropriated, out of any money in the Treasury and otherwise appropriated, for the current fiscal year $480,000, to be equally apportioned among the several States, and for each subsequent year, for the period of five years, $240,000, to be equally apportioned among the several States in the manner hereinafter provided: Provided, That there is hereby authorized to be appropriated for the use of the States, subject to the provisions of this Act, for the fiscal year ending June 30, 1922, an additional sum of $1,000,000, and annually thereafter, for the period of five years, an additional sum not to exceed $1,000,000: Provided further, That the additional appropriations herein authorized shall be apportioned $5,000 to each State and the balance

HOTEL ACCOMMODATIONS FOR STATE MEETING

To be held in Decatur, Illinois, May 15, 16, 17, 1923

Hotel	Location	No. of Rooms	With Bath	Without Bath	Double, With Bath	Double, Without Bath
Orlando (Headquarters)	Cor. S. Water and E. Wood Sts.	192	$2.50, $3.00, $3.50 (shower) $3.50, $4.00, $5.00 (tub)	$2.00 and $2.50	$4.50 to $9.00	
St. Nicholas	Lincoln Square	221	$2.00-$2.50	$1.50-$1.75	$3.75-$4.75	$2.75-$3.25
Kraft	Opposite R. R. Stations	90	$1.75-$3.00	$1.00-$1.25	$3.00	$1.50-$2.00
Brunswick	Cor. S. Water and E. Wood Sts.	50		$1.50		$2.00
St. James	153 S. Main St.	80	$1.50-$2.50	$1.00		

Members desiring rooms in private homes, write to Chairman of Hotel and Accommodations Committee. Those coming by auto, report to Headquarters, where they will be directed to garages.

DR. C. MARTIN WOOD,

Chairman, Hotel and Accommodations Committee.

among the States in the proportion which their population bears to the total population of the United States, not including outlying possessions, according to the last preceding United States census: And provided further, That no payment out of the additional appropriation, herein authorized shall be made in any year to any State until an equal sum has been appropriated for that year by the Legislature of such State for the maintenance of the services and facilities provided for in this Act.

So much of the amount apportioned to any State for any fiscal year as remains unpaid to such State at the close thereof shall be available for expenditures in that State until the close of the succeeding fiscal year.

Sec. 3. There is hereby created a Board of Maternity and Infant Hygiene, which shall consist of the Chief of the Children's Bureau, the Surgeon General of the United States Public Health Service, and the United States Commissioner of Education, and which is hereafter designated in this Act as the Board. The Board shall elect is own chairman and perform the duties provided for in this Act.

The Children's Bureau of the Department of Labor shall be charged with the administration of this Act, except as herein otherwise provided, and the Chief of the Children's Bureau shall be the executive officer. It shall be the duty of the Children's Bureau to make or cause to be made such studies, investigations, and reports as will promote the efficient administration of this Act.

Sec. 4. In order to secure the benefits of the appropriations authorized in section 2 of this Act, any State shall, through the legislative authority thereof, accept the provisions of this Act and designate or authorize the creation of a State agency with which the Children's Bureau shall have all necessary powers to cooperate as herein provided in the administration of the provisions of this Act: Provided, That in any State having a child welfare or child hygiene division in its State agency of health, the said State agency of health shall administer the provisions of this Act through such divisions. If the legislature of any State has not made provision for accepting the provisions of this Act the Governor of such State may in so far as he is authorized to do so by the laws of such State accept the provisions of this Act and designate or create a State agency to cooperate with the Children's Bureau until the adjournment of the first regular session of the legislature in such State following the passage of this Act.

Sec. 5. So much, not to exceed 5 per centum, of the additional appropriations authorized for any fiscal year under Section 2 of this Act, as the Children's Bureau may estimate to be necessary for administering the provisions of this Act, as herein provided, shall be deducted for that purpose, to be available until expended.

Sec. 6. Out of the amounts authorized under Section 5 of this Act the Children's Bureau is authorized to employ such assistants, clerks, and other persons in the District of Columbia and elsewhere, to be taken from the eligible lists of the Civil Service Commission, and to purchase such supplies, material, equipment, office fixtures, and apparatus, and to incur such travel and other expense as it may deem necessary for carrying out the purposes of this Act.

Sec. 7. Within sixty days after any appropriation authorized by this Act has been made, the Children's Bureau shall make the apportionment herein provided for and shall certify to the Secretary of the Treasury the amount estimated by the bureau to be necessary for administering the provisions of this Act, and shall certify to the Secretary of the Treasury and to the treasurers of the various States the amount which has been apportioned to each State for the fiscal year for which such appropriation has been made.

Sec. 8. Any State desiring to receive the benefits of this Act shall, by its agency described in section 4, submit to the Children's Bureau detailed plans for carrying out the provisions of this Act within such State, which plans shall be subject to the approval of the board: Provided, That the plans of the States under this Act shall provide that no official, or agent, or representative in carrying out the provisions of this Act shall enter any home or take charge of any child over the objection of the parents, or either of them, or the person standing in loco parentis or having custody of such child. If these plans shall be in conformity with the provisions of this Act and reasonably appropriate and adequate to carry out its purposes they shall be approved by the board and due notice of such approval shall be sent to the State agency by the chief of the Children's Bureau.

Sec. 9. No official, agent, or representative of the Children's Bureau shall by virtue of this Act have any right to enter any home over the objection of the owner thereof, or take charge of any child over the objection of the parents, or either of them, or of the person standing in loco parentis or having custody of such child. Nothing in this Act shall be construed as limiting the power of a parent or guardian or person standing in loco parentis to determine what treatment or correction shall be provided for a child or the agency or agencies to be employed for such purpose.

Sec. 10. Within sixty days after any appropriation authorized by this Act has been made, and as often thereafter while such appropriation remains unexpended as changed conditions may warrant, the Children's Bureau shall ascertain the amounts that have been appropriated by the legislatures of the several States accepting the provisions of this Act and shall certify to the Secretary of the Treasury the amount to which each State is entitled under the provisions of this Act. Such certificate shall state (1) that the State has, through its legislative authority, accepted the provisions of this Act and designated or authorized the creation of an agency to cooperate with the Children's Bureau, or that the State has otherwise accepted this Act, as provided in section 4 hereof; (2) the fact that the proper agency of the State has submitted to

the Children's Bureau detailed plans for carrying out the provisions of this Act, and that such plans have been approved by the Board; (3) the amount, if any, that has been appropriated by the legislature of the State for the maintenance of the services and facilities of this Act, as provided in section 2 hereof; and (4) the amount to which the State is entitled under the provisions of this Act. Such certificate, when in conformity with the provisions hereof, shall, until revoked as provided in section 12 hereof, be sufficient authority to the Secretary of the Treasury to make payment to the State in accordance therewith.

Sec. 11. Each State agency cooperating with the Children's Bureau under this Act shall make such reports concerning its operations and expenditures as shall be prescribed or requested by the Bureau. The Children's Bureau may, with the approval of the board, and shall, upon request of a majority of the board, withhold any further certificate provided for in section 10 hereof whenever it shall be determined as to any State that the agency thereof has not properly expended the money paid to it or the moneys herein required to be appropriated by such State for the purposes and in accordance with the provisions of this Act. Such certificate may be withheld until such time or upon such conditions as the Children's Bureau, with the approval of the board, may determine; when so withheld the State agency may appeal to the President of the United States who may either affirm or reverse the action of the Bureau with such directions as he shall consider proper: Provided, That before any such certificate shall be withheld from any State, the chairman of the board shall give notice in writing to the authority designated to represent the State, stating specifically wherein said State has failed to comply with the provisions of this Act.

Sec. 12. No portion of any moneys apportioned under this Act for the benefit of the States shall be applied, directly or indirectly, to the purchase, erection, preservation, or repair of any building or buildings or equipment, or for the purchase or rental of any buildings or lands, nor shall any such moneys or moneys required to be appropriated by any State for the purposes and in accordance with the provisions of this Act be used for the payment of any maternity or infancy pension, stipend, or gratuity.

Sec. 13. The Children's Bureau shall perform the duties assigned to it by this Act under the supervision of the Secretary of Labor, and he shall include in his annual report to Congress a full account of the administration of this Act and expenditures of the moneys herein authorized.

Sec. 14. This Act shall be construed as intending to secure to the various States control of the administration of this Act within their respective States, subject only to the provisions and purposes of this Act.

Amend the title so as to read: "For the promotion of the welfare and hygiene of maternity and infancy and for other purposes."

Passed the Senate July 22, 1921.

Attest: GEORGE A. SANDERSON,
Secretary.

COMMENT ON THE PROVISIONS OF THE SHEPPARD-TOWNER MATERNITY ACT AS AMENDED

Before being enacted several amendments were incorporated. These amendments were of course due to the terrific opposition to the bill that finally developed. These changes were as follows:

"Instead of being an open proposition, the Committee has indicated the purpose of making an arrangement for not over five years, unless continued by Act of Congress hereafter. Instead of giving the states $10,000 flat, it gives $10,000 for first year only, or at that rate for any portion of first year, and a $5,000 gratuity for each succeeding year of the 5-year period.

"In addition it authorizes appropriations not exceeding one million a year, out of which 5 per cent goes for administration. Then $5,000 is apportioned to each state and the remaining part of the one million is divided among the several states on basis of population.

"Whatever part of the one million is apportioned to a state becomes available only when matched, dollar for dollar, by the several states. A Board is created, consisting of the Chief of the Children's Bureau, the Surgeon General and the Commissioner of Education, which shall elect its own chairman.

"The policy of the Children's Bureau in respect to passing on the proposed plans of the various states for action must be approved by the Board and likewise the amount of money allotted to each state must be passed on by the Board.

"Neither state nor Federal officers or agents shall enter any home against the wishes of parent, guardian or person *in loco parentis.*

"The purpose of the Act now reads as follows: 'For the promotion of the welfare and hygiene of maternity and infancy and other purposes.'

"The only power given to the Children's Bureau, save under the direction of the Board, shall be to make studies, investigations and reports such as will promote the efficient administration of the Act.

"Each state submits its own plans to the Board; if approved, the money goes forward. Nothing in the Act shall be construed to determine what treatment or correction shall be given to any child, nor determine the agency or agencies for such treatment or correction. This is to

prevent discriminations in favor of any one school of medicine."

The concessions indicated by Chairman Winslow are obviously those forced by public criticism of the Bill. While they seek to prevent certain abuses in administration and the inauguration of cash benefits, etc., they by no means meet the fundamental objections to the Bill, as will be demonstrated.

1st: The states must still adopt such child welfare plans as the Federal authority may approve. The substitution of a Federal Board of three Federal officers for the Chief of the Children's Bureau does not in any way alter the fact that the Central Government will control—through the most sinister and abused of all controlling powers—the power to give or withhold money—the administrations of state agencies over which Congress has no legal control under the Constitution. In other words, the states are to be bribed to give a Federal Board control over a subject they have refused to give to Congress itself in the Constitution.

"We will give you so much money to let a Federal Board say what your state agency shall do, in spite of the fact that under Amendments IX and X the Federal Government has no legal right to say what your state agency shall do." This is the bald proposition, whether one Federal officer or 10,000 O. K. the allotments and plans.

2nd: Nothing material is given to needy mothers or children. No Maternity Hospital can be built anywhere with any part of the funds. A physician attending a destitute mother could not use 5 cents of the fund for medicine. Not a bed for a single mother or a bottle for a single baby is provided. The entire fund goes for administration, "investigations, reports and gratuities" to states which agree to let a Federal Board do what they have never given the Federal Government legal power to do under the Constitution.

3rd: Morally and legally, the Bill is as indefensible as ever. The Federal Government has no more right to collect money from New York, Illinois and Massachusetts and divide it among Montana, Wyoming and New Mexico than it has the right to take money from Jones and give it to Smith. The Federal Governments collects more money from a millionaire than from a laborer for the Federal Government, but it has no more legal or moral right to make New York "divide up" with Mexico than it has the right to make Rockefeller "divide up" with Eugene V. Debs.

4th: So-called "Federal Aid" as in this bill is not the same as in the Good Roads Bill. The Constitution gives Congress power over Interstate Commerce, transportation and post roads. With rural delivery, nearly every road is a post road. Likewise the vocational education bill for soldiers is different. The Constitution gives Congress power to "raise and support armies," and the duty of caring for the "Nation's defender, his widow and orphans," as Lincoln said; but the Constitution goes not give Congress power to "raise and support children, nor the right to tell states and parents how they shall be reared. The only legal way to get this power is by Federal Amendments. The present proposed plan is morally the same as *corruption and bribery,* whatever jugglery and excuses may be offered.

WHY ILLINOIS SHOULD NOT CO-OPERATE WITH THE SHEPPARD-TOWNER ACT

Illinois should refuse co-operation with the Sheppard-Towner Maternity Act from patriotic, moral, hygienic, public welfare, and financial motives.

That is to say, Illinois should refuse to co-operate with the Sheppard-Towner Maternity Act BECAUSE it is

1. An insidious attack upon the government of the republic and a potent malefactor against the bodily health of the citizens.

2. Socialistic rather than democratic; a political switchback rather than a child preservative.

3. A fecund breeder of more and higher taxes. The government "gifts" such as "Federal aid" are procurable for the people only by taxes from the people.

4. The principle of federal state aid as a means of financing public health work is an unsound financial policy.

5. Public Health work, except those activities that are purely national in character, is essentially a function of the state and local government and should be paid out of state and local funds.

6. No such emergency exists as has been claimed for justification of the maternity act and

there are no reliable statistics by which it can be proved that the United States stands seventeenth in the maternal death rate.

7. The means provided in the act will not afford an effective remedy for alleged existing conditions.

8. The distribution of federal funds to state health organizations will inevitably lead to the domination and dictation of state activities by the Children's Bureau.

9. The ability of the Children's Bureau to dictate and largely control the appointment of the head of the Children's Bureau in each state as well as all of the public health nurses, district superintendents and others, will result in the organization of a large body of salaried employes appointed and largely paid by a federal bureau, yet working under a state department of which they are to a large extent, independent. Such a condition will produce friction and confusion in public health work, and will make possible the development of a political machine under the control of the Children's Bureau.

10. The problem of reducing maternal and infant death rates is largely a medical problem. Whenever it pleases the Sheppard-Towner Maternity act authorities can work entirely under lay direction and independent of medical control.

11. With the exception of those activities which are clearly national in character such as quarantine and the regulation of inter-state commerce and the like, public health work is a function of the state and local governments and should be paid for out of state and local funds and directed by state and local officials. The furnishing of instruction or care to mothers or any other persons needing such instrutcion is just as much a function of local government as it is the providing of food and clothes for the destitute. The assumption and exercise of these functions by the Federal Government is an invasion of the legitimate activities of the state.

12. Further, it is: A destroyer of individual rights and a developer of community supervision.

13. A conferrer of a million salaried jobs for political incumbents but not a dispenser of either clothing, shelter, food, medicine or medical care for any mother or any child.

14. A measure that will pay a retinue of politicians to disarrange the domesticity of a citizenry while the political wage is levied high-handedly out of the pockets of those whom the measure assumes to serve.

15. A masterpiece of false witness between politicians and the people both present and in the generations yet to come.

16. An invader of private morality and an abaser of humanity to the level of animal and poultry bureaus.

17. A socialistic crime committed in the name of education.

18. A lever increasing the powers lodged now in the Department of Labor as by this bill the Children's Bureau of that portfolio becomes the official arbiter of the vital domesticity of the United States. Per sequence, the temple of every woman's body, becomes a political taxtable and an asset toward healers. Upon a woman's fecundity or lack of it will hinge the bread and butter jobs of a bureaucratic regiment.

19. An inductor of the practice of obstetrics to the rule of thumb of political chicanery and machine manipulation.

20. A fundamental process towards the eventual establishment of a permanent lay dictation of the practice of medical and surgical science.

21. A tax bearing boomerang, rending the citizenry by community, state, county and Federal levies for which will be received the octopus burden of a pack of strawbosses that will help no one and hurt many.

The Sheppard-Towner Maternity Act has achieved a certain amount of favor, or at the least of toleration, principally from two classes of people. In the first class may be placed those who are to benefit politically, either directly or indirectly by this Machiavellian piece of legislation. In the second class are those who know nothing about the actual content of the Sheppard-Towner Maternity Act but are finely misled by the name, and by certain rather emotion-reflexes aroused unconsciously in the average mind by the word "maternity."

The political beneficiaries of the bill know that its intent, content and portent are pork barrel from bung to ballast. The protesting but taxpaying citizens have a bland idea that in some blanket fashion this Sheppard-Towner Maternity

Act intends to dole out adequate care and shelter to mothers and children in poverty stricken homes, where maternity is almost perpetually the order of the day and where the necessaries of decent living ar not.

Now that this is exactly *not* what the Sheppard-Towner Maternity Act has any intention of doing is exactly *what* the average citizen of the United States does not know and has pretty carefully been kept from knowing. That the Sheppard-Towner Maternity Act *does* intend to put upon the tax-payer's bounty list herds upon top of herds of investigators, inspectors, record keepers, red tape winders and political heelers of any creed, sex, race or color who will be legally entitled to know as many intimate details about a man's wife as he does himself, and to inscribe this knowledge on the public documents of the country, is *exactly* what the average citizen does not know. That under the mask of "Education as to what maternal care should be" this bill intends to limit its benevolence to paying the salaries of the scouts, sleuths and maternal secret service is another item in what the citizen is not being taught about the Sheppard-Towner Maternity bill.

Daubed over with the sophistries of "Federal Aid" and "governmental gifts" the Sheppard-Towner Maternity Bill smirks at the voter and the keepers of the great American home, hoping by the fragrance of synthetic altruism to delude and debauch the greatest bulwark against socialism that the world has ever known.

"Federal Aid!" A new Santa Claus come to judgment in a woman's hour of travail. Who knows where the "Federal Aid" gets its money?

Out of the pockets of the citizens of the United States who pay taxes of which there have been plenty since the war burden fell and the weight of Mr. Volstead dropped upon the country. This is no argument against prohibition but the sanest minds admit that the tax-tables of the United States are not yet recovered fully from the loss of liquor revenue. And yet every pettifogging politician in the country knows it. The pettifogging politician finds rarest evolution in the professional uplifters, reformers and highbrows, who for good pay and short hours are always willing to tell men and women who earn their bread by the sweat of their brows, how money should be spent and souls put in order.

The speech that Senator James A. Reed of Missouri made in the United States Senate June 29, July 21 and 22, 1921, when the iniquitous Sheppard-Towner Maternity bill came up for hearing should be put into the hands of every voter who respects women and unborn children.

"The ambitious character of the scheme," Senator Reed said, "the vast number of people its proponents hope to employ, is indicated by the fact that the bill as introduced called for an annual appropriation of $4,000,000. That demand being too much for the stomach of the Committee on Education and Labor, the bill as reported cuts the appropriation to $1,480,000 for the present year. One million dollars of the amount is to be divided among the states in proportion to their population. Similar appropriations for each succeeding year are contemplated. It is certain much larger sums will be demanded. There is no limit within the bounds of the appropriation to the number of people who may be employed, the salaries which may be paid, or upon the money which may be expended in literature, propaganda and traveling about the country. The entire control is placed in the Children's Bureau. It can do with the taxpayers' money almost anything it may desire. The States can get no money unless they expend the funds in accordance with the demands of the bureau, however fantastic, foolish or dangerous the demands may be. I have stated that the above mentioned vast powers are vested in the Children's Bureau. But the chief of the Bureau is in fact supreme. It is true that a dignified advisory committee is named in the bill, but the chief is nowhere compelled to accept its advice or that of anyone else." Whereat in an interruption Mr. Lodge remarked:

"In other words, unlike all other bureaus and commissions under the government that I know of, the head of this bureau is in absolute and final control."

Mr. Reed: "I so understand the bill."

Mr. Lodge: "Not even subject to the orders of the President of the United States so far as this bill goes."

Mr. Sheppard: "The Good Roads Bureau has similiar authority.

Mr. Reed: . . . "The commission of a

vicious act cannot be justified by the citation of a vicious precedent . . . The fundamental doctrines on which the bill is founded were drawn chiefly from the medical, socialistic and bolshevistic philosophy of Germany and Russia. That proposition I shall sustain by the literature published by the Children's Bureau. . . . The bill is intended to be an entering wedge for more radical measures. It is contrary to the fundamental principles of English law as they have existed for a thousand years.

One of the worst products of the late war was that the state should take charge of the individual citizen. All of the radical maternity schemes involve the assumption by the state of the authority to interfere in the family relations. They imply the right of State visitation and espionage. They are not to be tolerated in a free country.

New York, Maine, Massachusetts, Rhode Island, Louisiana and Washington have rejected the proffered "Federal Aid" in the Sheppard-Towner Maternity Bill. The attorney general of Massachusetts has gone into court to ask that the law be declared unconstitutional. This man points out that even those states declining to accept the Sheppard-Towner Maternity Act's "Federal aid" are still called upon to pay their share of the money which is being given to other states, which never refuse a federal appropriation of any kind for any purpose whatever.

Against this bill two great suits are pending. There is the one in the United States Supreme Court by the State of Massachusetts, and a supporting suit by a tax-payer in the District Supreme Court.

Of this litigation comment has been made that "This Sheppard-Towner Maternity suit is as important as the Dredd-Scott case and may have as far reaching results."

The communistic interpretation of the welfare clause in this act must be halted. The "federal aid plot" must not be permitted to rob into bankruptcy the prosperous states. If democracy is to survive these two evils must be stopped. Already there is built up in the United States a most dangerous form of tyranny, a meddling paternalism that knows no master. In the Sheppard-Towner bill the menace is hidden under an assumed humanitarianism. Of the Paternalistic bills threatening Washington it is meet to note that Senator Borah has said:

"The course we are now pursuing will prove in the long run more dangerous to our government than a foreign foe." Senator Borah said: "A proud strong nation may suffer a reverse in arms but time may still find it triumphant. An independent and self-reliant people may be overcome by the fortunes of war, but time fights on their side to final victory. But a nation whose citizenship has been drugged and debauched by subsidies and gratuities and bonuses, who have surrendered to the excesses of a treasury orgy, has taken the road over which no nation has ever yet been able to effect a successful retreat."

The Sheppard-Towner Maternity bill might far more truthfully be called "The Searchers and Tattlers Money-making Bund." The only people who will benefit will be the people on the pay-roll. It will be a great day for the traveling nurse who can talk to her tongue's content, telling women how to take care of themselves during their maternity period.

Mind you, this task will not be in the hands of physicians but in those of nurses and political inspectors and under the undisputed despotism of the chief of the Children's Bureau. At present this chief happens to be an unmarried woman, who far from being a physician is not even a nurse,—either graduate or "practical."

All in all it is a rapier fine blade to be used as the keen opening wedge for state medicine.

In the enactment of the Sheppard-Towner Maternity Bill the apostles of unrest have won their first objective of socialized medicine.

The Sheppard-Towner Maternity Bill has been enacted for an experimental period of five years. It carries with it an annual Federal and State appropriation averaging two million, two hundred and thirty-eight thousand dollars per year ($2,238,000); of this sum, fifty thousand dollars ($50,000) goes to the Children's Bureau of the Department of Labor. Of course all this money comes out of the pockets of the tax-payers and it is peculiar how many people fail to realize that the only money the government has comes out of taxation of the people.

The main source of federal revenue is no longer from the tariff and from liquor and tobacco, with the burden of these taxes resting upon the several states substantially in propor-

tion to population and consumption. Today the main sources of federal revenue are the individual and corporate income taxes and the inheritance tax. The burden of these rests with peculiar weight upon Illinois and the other highly developed industrial states. It appears, too, that much of the money collected by the federal government in Illinois is expended upon work in other states. A great deal more money will be diverted in this fashion through the Sheppard-Towner Maternity Act and with no proportionate benefit. This expenditure of Illinois taxes in other states constitutes a great drain upon the resources of Illinois, adding to the cost of living of all her inhabitants whether they pay directly much or little in taxes.

To show how the burden of taxes falls with especial weight upon Illinois note that in 1921, Illinois turned over to the federal government, the huge sum of $388,924,964.75. Alabama with a population nearly one-half that of Illinois contributed only $18,429,531.41 or less than five per cent. (5%) of the amount collected in Illinois.

Mississippi with a population nearly one-third that of Illinois, turned over only $8,996,571.95 or approximately two per cent. (2%) of the amount collected in Illinois. And when the Sheppard-Towner Act begins to function the figures will prove an even more unjust distribution. Illinois should deliberate with meticulous care all projects for federal activities, involving as they do expenditures of large sums of money. To reduce the problem to its simplest terms, let us suppose that the sole function of the United States was road building, and that one million dollars was collected annually by income taxes: that of this amount, five million dollars came from citizens in the state of Illinois, but that only two million dollars was spent on Illinois roads. Obviously the state of Illinois would lose three millions of dollars on this transaction and would be three million dollars better off if Illinois built its own roads from its own money.

Where "Federal aid" achieves its duplicity and chicanery is by telling the citizens that the federal government will give a stated group or commonwealth a certain amount of money for a certain purpose provided the purposed beneficiary appropriates an equal or relative amount. Federal money however is not in any instance a gift. It is a return of taxes collected from the citizenry. Perhaps the return may amount to thirty cents on the dollar of additional federal taxes collected from the citizens to meet the total outlay among the several states. By every such transaction the state of Illinois loses. The majority of the states gain. As the great majority of states get more than they contribute out of "Federal Aid" it is not to be wondered at that they are enthusiastic about this method of legislation. The fact is that nine states, one of which is Illinois, pay the entire bills for most of the "federal aid" enterprises. Question is raised as to the constitutionality of these practices. Examining specifically the Sheppard-Towner Maternity Act view the way in which the matter works out.

Enacted experimentally for a space of five years, there is given outright to each state a specific sum of $10,000 in the first year and $5,000 thereafter, irrespective of population. This is supplemented with a further sum of one million dollars to be apportioned among those states which approximate a like amount, $5,000 to each, and the balance according to population. This expense rests with special burden on Illinois and the other highly developed industrial states. Nevada with a population of only 77,000 gets the same specific appropriation as Illinois with a population of 6,485,280. Mississippi pays about 2.25 per cent. of the internal revenue paid by Illinois but has a population nearly one-third of that of Illinois and gets the same specific appropriation as Illinois. Additionally, based on population, Mississippi gets an appropriation nearly one-third as large as that given to Illinois on a basis of population.

Complete statistics of income for the year 1920, made public Oct 1, 1922, show that (95.83) ninety-five per cent. of the total tax was paid by twelve states. Out of this ninety-five per cent, of the total specific percentages included:

New York	23.69
Pennsylvania	12.13
Illinois	8.68
Ohio	6.76
Massachusetts	5.82
Total	57.08
Michigan, Indiana, Iowa, New Jersey, Missouri, California, Maryland	38.75
	95.83

This leaves thirty-eight states to pay 4.17 per cent. of the taxes from which their profit on the Sheppard-Towner appropriation is easy to figure. For these thirty-eight states "Federal Aid" is a gift indeed. *Illinois is not one of the 38 to profit, but one of the twelve to pay! And in the list of those states that foot the bills, Illinois stands third. Only New York and Pennsylvania precede.*

While the Sheppard-Towner Act was under consideration, the propagandists tried to assure the citizenry that this bill was not class legislation and that it was not designed for the special benefit of a class of people known as "tax-eaters." Under this act every one of the 2,504,683 babies born in the United States per annum must share in the distribution of two million, one hundred and eighty-eight thousand dollars ($2,188,000) of Federal funds. This means about eighty-seven cents per baby, or such moiety of that eighty-seven cents as will remain for the baby after the political party workers and the social service workers get paid. Statistics for the annual birth-rate mentioned here were on the basis of 1920, U. S. Public Health Report, of December 23, 1921.

On the basis of 18.9 per thousand population, Oregon has the lowest birth-rate in the Union. Nevertheless the state of Oregon will have the $26,508 for those 14,806 babies born every year, or $1.79 per baby, the maximum for every state. On a basis of 31.6 per thousand population, North Carolina, with the highest birthrate in the Nation will have only $50,364 of both Federal and State funds for its 80,806 babies, per annum or sixty-two cents for every child born. If the State of Illinois comes into the fold, it will have, $103,188 *GROSS* for its estimated 154,000 babies per annum or sixty cents for every child born. It will cost the State of New York $396,722 in taxes for the privilege of the Sheppard-Towner Act. Here is a clear penalty of $241,278 to carry ninety per cent. of the parasitism of thirty-eight states.

Even to the unthinking it is evident that the higher a state's birthrate is, the fewer will be the pennies available for every child born. The higher the amount allotable per child born, the fewer babies permissible.

MATERNITY EDUCATION SHOULD BE DIRECTED AND SUPERVISED ONLY BY PHYSICIANS

Pre-natal education of the mother prospective should not be risked to lay teachers. The hygiene of maternity should be explained only by physicians, as medical men are the only individuals trained properly in this respect.

Under the Sheppard-Towner Maternity act, directed by a lay woman and elucidated through an army of nurses, socialogists, politicians and other lay people generally, the measure cannot fail ultimately to prove destructive to the best interests of mother, child and nation.

For this reason the direction of maternity education should be supervised by the U. S. Public Health Service and the Departments of Health of the respective states.

Now we do not oppose such public assistance for needy mothers and their children as responsible, practical and well-informed leaders in social and philanthropic work may recommend as necessary. Nor do we oppose the appropriations and taxes, state or local, which would be necessary to carry into effect sound and well-advised recommendations in this direction.

We do oppose, however, the wholesale gift of free public aid of this character to all those who will avail themselves thereof, regardless of their financial abilities, and we do oppose the making of appropriations or the levying of taxes for any such broad purpose. Such paternalistic governmental activities strike at the very basis of the principle of self-reliance which has been the foundation of the independent American citizenship.

We oppose also, the intermingling of state and local and, especially, of state and federal finance in any function of government, as unsound, confusing and stimulating to extravagance. To abolish all or any of the existing forms of state and federal aid may be impracticable, but certainly we feel that no additional steps should be taken in this mistaken direction.

The Sheppard-Towner Act runs counter to our opposition to the unsound principles of federal aid. Friends of this Act in Illinois, in their bills to accept its terms and its bounties, in advance of its enactment, interpreted it as designated to give "aid" to all, regardless of need, while in its vague

phraseology, there is nothing to suggest the contract.

Therefore, from this point of view also, the Sheppard-Towner Act is objectionable. Further, it is a new measure. Its constitutionality is not established. Its grants expire automatically in five years. So far as each state is concerned, its grants do not apply until the General Assembly accepts them. Illinois puts into these federal aid "pots" far more than she can take out. When she accepts her little share of these doles she is adding just that much to the federal tax burdens of her citizens, and in addition is adding to their state or local taxes, or both. Illinois can well afford to decline the Sheppard-Towner offer of money from Uncle Sam, and to decline it with thanks. It will be cheaper for citizens of Illinois, even though for the next five years, they pay federal income taxes, to supply federal aid, to such states as do accept the Sheppard-Towner terms. When our delegation in Congress sees that the Illinois General Assembly will not be imposed upon, they will come to their senses and decline to continue this imposition upon their constituents at home. They will stand with the delegations from Massachusetts and New York who have already declined to accept "aid" under the Sheppard-Towner bill, and with Congressmen and men from other states who are beginning to see the light. Illinois, as a state, or its counties, or its municipalities, can afford to tax themselves more than they are doing now, if it be necessary to aid unfortunate mothers and children. Illinois cannot afford to accept aid for any of its activities from Uncle Sam. It means first, a double tax upon Illinois citizens for Illinois' share in the federal fund, and second, it means the enactment by Congress of more and more measures to tax Illinois for the benefit of other states which are all able to finance their own needs and governmental activities. Of equal importance with the fiscal objections to the federal "aid" idea is the thought that it strikes at the cornerstone of our American Republic—local self government. Where the treasure is—there will the heart be. As our local officials look more and more to Washington for their revenues, they will become more and more indifferent to local public sentiment.

This dangerous tendency towards federal aid and interference should be checked before it runs us into the confusion these same methods have achieved in Great Britain. A good way to begin is for Illinois, following the example of New York and Massachusetts, to decline the terms of the Sheppard-Towner act. Motherhood, childhood and true philanthropy will gain, rather than suffer by such a course.

HOW THINKING MEN VIEW THE MATERNITY ACT, STATE SUBSIDIES AND SIMILAR MENACING LEGISLATION

What the Sheppard-Towner Maternity Act is about to perpetrate against public welfare under the cloak of a seeming philanthropy has been made the subject of much comment by those versed in the making and the meaning of laws and their legislation.

These commentors stand aghast at the gulf separating the Sheppard-Towner Maternity Act from what it really is and what it pretends to be.

In quotation let it be noted:

"The Federal government should appropriate only for those interests which are purely of National concern and clearly within the purposes for which the federal union was established," says Frank O. Lowden, the "war governor" of Illinois. The then governor of Illinois emphasized this point before the students at the convocation of the University of Illinois. Again and again ex-Governor Lowden has protested against usurpation of state rights at state expense:

"If the present tendencies towards centralization at Washington go on, all vitality will go from the several communities and states of the country in the management of their own affairs. I am in full sympathy with the condemnation of the principle of Federal State Aid as pernicious and dangerous, as an encroachment on the functions of the state and an invasion of state authority tending to the demoralization of State public health work rather than its development. There is a dangerous tendency in our state towards the assumption by voluntary and irresponsible extra governmental agencies of powers and functions properly belonging to the locally constituted health authorities.

"The framers of the constitution recognized the imperfections of democracy and sought to guard against them in the instrument they framed. They proceeded upon the theory that full sovereign power resided in the people. But they did not confer all that power upon the government. There were some rights so precious that they would not intrust them even to a government of their own creation, such as the right of freedom of religious worship and freedom of speech. They guarded the life and the liberty of the property of the individual, and placed them forever, as they hoped, beyond the whim or malice of a majority, no

matter how large. Complete sovereign power today abides, not in any goverment, either federal or state, or in all governments combined, but is found in its fullness only in the people of the United States. This is the real significance of a written constitution such as ours. The lesson of history is that no individual, as a king in a kingdom, and no selected group as in an aristocracy, and no majority, as in a democracy, can be trusted with supreme power. The outstanding merit, therefore of our constitution is that the people so far have refused to divest themselves of their own inherent sovereign power over the fundamental rights of the individual. Among the subjects upon which our federal and our state constitutions have imposed limitations upon the government they created is the subject of taxation. These constitutional limitations have been of immense value. And yet taxation is increasing much more rapidly than wealth itself.

"The real friend of popular government is not he who constantly tells the people that they are wrong, but he who warns them against dangers of their own creation. One prolific cause of rapidly increasing cost of government is to be found in the number of public agencies that have authority to levy taxes. There is the federal government; there is the state government; there is the local municipal government. In many states there is the school board. All of these have the power, independently of one another, to impose taxes. In addition, where the bonding power has been reached by the municipality, there has been a growing tendency to create a new district for some new purposes covering the same territory already occupied by other municipalities. More and more the government appropriates for purposes which properly belong to the state. The state is urged all the while to appropriate for objects for which the local communities should care. This results in endless duplication in cost of administration and consequent extravagance. . . .

"The people seem to act on the theory that it is always laudable to get whatever money they can from the public treasury for their own community. They seem to feel that this costs them nothing. No more expensive phrases have been invented in recent years than "state aid" and "federal aid." There is scarcely a domain in the field of government properly belonging to the municipality or the state which the government is not seeking to invade by the specious phrase "federal aid." The bureaucrats who initiate these movements for an extension of their own power draw great strength from the class specially affected. This rapid extension of federal administration not only means greatly increased expenses because of duplication of efforts, but it means the gradual breaking down of local self government in America. Whatever tends to atrophy local self-government weakens the republic.

"The employes of the city, or the state, or the nation all the while become a more important factor in increasing the cost of government. Whatever the nominal purpose of their organizations their keenest activities are directed towards an increase in pay. It is unfortunate that nearly always those who seek for any purpose to get money out of the public treasury are thoroughly organized. The tax-payers as such, never are. Let the proportion of public employes continue to increase as rapidly as they have in late years, and we will, within a reasonable time witness this phenomenon: Our population divided into two classes,—those holding public office, still a minority it is true, and all others working to support the minority in office. From that condition to the soviet form of government it is but a single step."

Congresswoman Alice Robertson remarks: "Its only purpose is to build up more of a federal machine, and to loot the treasury under the guise of a worthy object. The bill does nothing other than appropriate money. No restrictions are thrown around its expenditures and no scheme or skeleton devised for its operation. If the caption were left off one would be at a loss to ascertain its purpose. Its entire plan is left to conjecture. In a law court it would be thrown out for indefiniteness and uncertainty. But even otherwise, the federal government is going into too many projects, and I do not believe the American people will stand much longer its continual invasion of the home and of personal rights and privileges. In other words they do not sanction the German system of paternalistic government. A mere glance at the bill shows that 'maternity and infancy' are mentioned only four times. One senator characterized the bill,—which he voted for because the women wanted it, although he told them he disapproved of it—as a 'very large harness on a very little horse.' In other words, all appropriation and administration and negligible help."

Dr. Charles O'Donovan: "The bill provides in substance, records, pamphlets, travel, etc.,—offices for politicians, authority for those very slightly prepared to use it properly, nothing for mothers and children. The excellent purpose of the title is not attained by the act. Let everyone read the act carefully; that should be enough to kill it. To produce any result whatever, far more money than is mentioned in the act will be required. The purpose seems to be to start the bureaucratic ball rolling and let the future take care of itself. The people, already sadly burdened by taxation, should at once stop this needless extravagance."

Eben W. Burmstead, secretary of the Massachusetts Civic Alliance: "This society is opposed to state care of maternity except for the worthy poor."

Dr. H. S. Cumming, Surgeon General, United States Public Health Service: "The Public Health Service believes that the most important factor in conserving the health of the people is the development in local communities of a sense of responsibility for their own health conditions where they are willing to finance and support adequate local health organization. The most effective work in the protection of maternal and child life will be done by such local health organization as a part of the general health program for the protection of the health of the people in that community."

Dr. David Kinley, President of the University of Illinois: "The onward sweep of the growth of federal control, which is one of the most astonishing facts in our history, is the most important question of internal administration before the American people today. This

onward sweep of federal power is breaking down our state authority. Are we to allow it to gain control over all the details of local affairs? Education is one of the matters not delegated to the federal government by the constitution. It is a state function. The class of educational bills which now attract public attention involves a different principle of federal aid than the principle involved by the land grant of 1862. Under this law, the federal government allows the state or institutions to use their own discretion as to ways and means of carrying out the purposes of the law. The more recent act, however, involve a principle which is vicious because it tends to undermine local authority. Some of the new proposals now under consideration involve this bad principle in a much more far-reaching way than the Smith-Lever and Smith-Hughes acts. That vicious principle is the provision that the states will match the federal appropriation with equal amounts. This plan contains within itself the germ of a power that when developed will determine the character and extent of our education. This is the same vicious fifty-fifty proposition held out as a sop to induce the states to do the particular things that the federal department wants.

"If the principle of further federal aid is adopted, it should be on the plan of the first federal grants to the land grant colleges. That is to say appropriations should be made direct to the states, to be distributed by their legislatures and to them should be left the mode of distribution."

Again says Sen. William E. Borah: "The maternity Act appropriates a very considerable sum of money. The amount which it appropriates or authorizes in the first instance, however, is small compared to what will be necessary a little later. With bureaus or departments, the appetite increases with what it feeds upon. It is well to remember that the taxpayer is the same for the state taxes as for the federal government. It makes little difference whether one government, the state or the federal imposes the tax. There is only one people to take care of both taxes. Furthermore under the present terms and stipulations of the bill, very little of the appropriation will get further than to take care of the additional offices and salaries which they will require. The coming winter will find many a mother in agony, not for want of instruction as to how to care for her child, but for want of money to feed and clothe and keep warm her child. The Maternity Act would be a delusion to the thousands of mothers thus situated. We should not expend a dollar, nor impose a single item of expense upon the people of this country until relief from taxes is in sight, and until men and women oppressed, hungry and out of work have work and are sheltered and clothed."

Senator Stanley, quoting Buckle on the floor of the senate, says: "'For 500 years,' wrote Buckle, 'all advance in legislation has been made by repealing laws.' With many vociferous factions which exist in our midst there is a settled conviction, first, that all evils yield to legislation, and next, that an enactment works automatically. Consequently at the last session of Congress more than 20,000 bills were introduced. It is very probable that very few of the statesmen who introduced these bills expected that they would be adopted. These models of legislative wisdom range from the proposal to send the citizen to bed every night at ten o'clock, to a plan for the establishment of a Federal bureau to teach all nations the blessings of democracy. Meanwhile as democracy dies at home, bureaucracy flourishes. When governments undertake projects which are nothing but disguised socialism, laws of a very odd and curious nature will be found necessary."

Senator Moses: "The Americans of seventy years ago would stand aghast if they knew how many activities which properly belong to the individual or to the family are now taken over by the government."

Attorney General Crim: "The department of justice is staggering under the load imposed by sumptuary and police laws—laws that within all common sense fall within the natural sphere of local governments. Unless there is a halt in this tendency to saddle all responsibilities on the federal government, the time will come when we shall have in Washington a bureaucracy knowing no master—and one day the country will be in ruins."

The State of Massachusetts, speaking through its Attorney-General asks: "What is this Sheppard-Towner Bill? It is called 'an act for the promotion of the Welfare and Hygiene of Maternity and Infancy and for other purposes.' The power is vested in a 'Board of Maternity and Infant Hygiene.' . . ."

The State of Massachusetts, speaking through its bill filed to test the constitutionality of the Sheppard-Towner Bill in the Supreme Court of the United States says "the plaintiff (Massachusetts) says that it is informed and therefore avers that the . . . commonly designated as 'Federal Aid' legislation has been found. or is believed to be, an effective means of inducing states to yield a portion of their sovereign rights for the consideration offered; that unless checked by the Supreme Court on the ground of unconstitutionality no limit can be foreseen to the amounts that may thus be expended for local concern by statutes providing for the establishment of large federal bureaus with many officers for the performance of duties which are entirely beyond the authority conferred upon the United States by the Constitution."

The Governor of the State of Maine in refusing to submit to the terms of the bill said: "The State of Maine will not sell its birthright, and principle, not expediency has been the determining factor with me in the solution of this problem. The proffered $5,000 has been referred to as a free gift to the state of Maine, while in reality, the federal government is taxing the state to raise this money and now in order to help our mothers and children offers to pay back to the state the trivial sum of less than two thirds of one cent for each inhabitant. The people of Maine are willing and able to care for their own mothers and children and I have faith to believe that Maine men and women will do this rather than accept so-called gratuities from a Federal Bureau. Already we are overburdened with Federal interference and control

and our citizens and industries are hampered by Federal inspectors and other officials from Washington. There is a grave doubt as to whether or not the governor of a state has the power to accept the bill in question, even though Congress attempts to confer that power upon him. The governor of a state does not derive his authority from the federal government and a Federal Bill that seeks to confer new powers upon him is of questionable standing.

"It is apparent that the present bill is but an entering wedge for more radical legislation and Maine's delegation in Congress, our Senators and Representatives, should be urged to resist all further encroachment by the Federal Government. We should not encourage the centralization of power in Washington."

The Massachusetts Civic Alliance: "The Sheppard-Towner Maternity Bill is an anomalous bill which requires the states to establish extension courses of lectures and consultation centers, but forbids the renting or purchase of any building in which to hold them. It employs nurses, but not for nursing. Its title pretends that it is for the public protection of infants, but the bill naively provides a method of protecting infants from its ministrations. It is for mothers, but it overlooks pregnant women and expectant mothers. It is for child-bearing, but provides neither doctor, nurse or midwife for obstetrics. It is advanced on the claim that it will reduce deaths of mothers and infants, but it makes no medical provision and employs no physician. What then, is its object?"

George E. Frothingham, chairman Committee on Civic and Industrial Relations, says: "The headlines are working with telling effect—Welfare—getting something for nothing. This Sheppard-Towner Act is a joke, albeit a serious one. It provides millions that more or less well trained individuals may go forth to lecture and hold conversations with expectant mothers. These conversations are well illustrated in a story in the January *Atlantic*. The state conversationalist met the needs of a widowed mother with a tubercular child in this fashion. She stayed a few moments to get all the family detail and left 'hoping' things would get better and suggesting a clinic, while the mother went back to the family washtub. In a nut shell, the widow with the sick child could go to the doctors for free service while the conversationalist got her questions answered and drew her pay for eight hours' work. The Sheppard-Towner Act furnishes ample funds for these conversations, but it gives nothing else. It will not give the services of physicians—it will not provide for nursing—it will not provide for medicine—it will not provide for a bit of clothing for an infant—but it does provide good salaries and ample leisure for holders of conversations. As a measure, the Sheppard-Towner Act, with its empty promises is to make one smile. But to the citizen, the Sheppard-Towner Act with its untold possibilities for centralized power for bureaucratic control—for taxes piled on taxes for the benefit of the office holder at the expense of the worker—is a menace which should be met and wiped out."

Senator King of Utah: "Others besides doctors share in the opposition to the Sheppard-Towner Maternity Act and these opponents take the ground that should appeal to all patriotic Americans—the position that individual liberty and state and local government must be preserved inviolate from federal usurpation or invasion."

Again, when Mr. McKellar, the senator from Tennessee, spoke in favor of the Towner education bill, then in many points analogous to the Sheppard-Towner Maternity Act, Senator King said:

"Mr. President, there are so many controversial questions before us now that I shall not undertake to precipitate another by engaging in a discussion with the senator from Tennessee. I shall only express my regret that he has *indorsed a policy which is at variance with democratic principles* and has confessed the failure of democratic institutions in our form of government. *His position is a condemnation of the states and an indictment of the capacity of the people to govern themselves.*

"In my opinion the states will measure up to the requirements placed upon them. The people are competent to handle their local and domestic affairs and when fully acquainted with the question involved in this plan to project the federal government into the local concerns of the states, they will repudiate it and call upon their respective states to fully discharge any and all obligations devolving upon them. There will be no confession of state degeneracy or the necessity of aid from the federal government in order that the people and the sovereign states may perform the duties which they have voluntarily assumed. If Tennessee has failed in any respect in the past, I am sure that the patriotic people of that great state will make full amends in the future. I know the courage and spirit of the sons and daughters of Tennessee. They ask for no benefactions and largesses from the federal government in order that they may be relieved of duties which rest upon their state. Moreover, any *contributions* made by congress *must be taken from the people,* including the residents of Tennessee. They can collect their own taxes and expend the same better than the bureaucracy at Washington. *The duties and functions of the state are clear and there has not been granted to the general government the power to control education or tax the people for domestic matters.* The federal government *has only delegated powers* and it may not transcend them.

"I am sorry to see my good friend depart from sound democratic principles and declare his support of politics which rest upon bureaucracy and *paternalism and which in time will eventually change our form of government.*"

Massachusetts Medical Society, N. W., Dr. Alfred H. Quessy: "This Sheppard-Towner Maternity Act is legislation that is unnecessary and superfluous. It is not really a health measure, as it is claimed, but is essentially socialistic in tendency, as it is in Germany and elsewhere, and we don't want socialism parading in this nation under the guise of health measures. This Sheppard-Towner Maternity Act points to the

wrong cause and the wrong remedy for maternal and infant mortality. It is a direct attempt to give autocratic power to the department of health in each state where advisory power alone should prevail, and an invasion of the realm of private rights, personal liberties and constitutional safeguards."

Massachusetts Civic Alliance, Eben Burnstead, secretary: "Infant mortality in the United States is not high. We believe that a change of this system that we now have from private to public control will not give you any less infant mortality, but it would tend to a greater infant mortality because you will have a system that has not worked efficiently in other matters, to take the place of a system that has made America what she is."

Fitchburg, Massachusetts, *Daily Sentinel:* "There is an economic question that enters into all proposed legislation such as the Sheppard-Towner Maternity Act. Will not these measures that are proposed so abundantly and as it would seem, so carelessly, bring greater evils in their train than those they propose to expunge? One most certain result of the adoption of these state relief measures would be the establishment of a powerful bureaucracy prone to work for its own aggrandizement rather than for the public welfare. If such a bureaucracy should once get into the saddle, with the usual propaganda for its perpetuation and enlargement carried on at the expense of the taxpayers, it would take more than a mere failure to function properly to unseat it. Never has thoughtfulness and caution been more needed than at present. A wave of emotionalism has swept over the country. Whatever is, is assumed to be wrong. Change, regardless of its results, is assumed to be synonymous with progress."

Women's Municipal League of Boston, Mrs. William Lowell Putnam: "In childbirth two lives are at stake and in the care of this important function those two lives are dependent upon the care given the mother; hence this care should only be given by trained physicians and not administered by lay people. The Sheppard-Towner Act puts the medical care of maternity though administered by the State Boards of Health completely under the control of a lay woman, the chief of the Children's Bureau of the Department of Labor."

Senator Moses of New Hampshire is reported to have said that, "The Burbanks of politics have grafted strange stalks on the body of our statutes and have created a hybrid without pride of ancestry or hope of posterity. This used to be the land of the free. Now it is the region of the regulated. As it is now, the influence of the government is prenatal through the maternity bill and postmortem through the inheritance act. It controls us before we are born and after we are dead."

According to Senator Stanley, who recently unbosomed himself on this subject in the Senate, "at present it is fair to say that every two laborers carry a tax-eater on their back." The reason for this curious and unhealthy phenomenon he traces to the fact that at present the Federal Government "tries to regulate everything from the setting of a hen to the running of a railroad. A few years ago, you could milk a cow without a Federal inspector at your heels. The cost of this regulation has risen from $232,000,000 in 1916 to $1,115,000,000 in 1922." For the Federal regulator is always an expert, and the salary for an expert cannot reasonably be kept at a low figure.

The cost of government, Federal, State and local, for 1922, has been calculated as, approximately, $8,400,000,000. This sum, which is nearly equal to the value of all the gold in the world, is paid by the people. Much of it is paid for work which neither the Federal nor the State governments are authorized to undertake. If we could rid ourselves of the semi-socialistic views now so prevalent, according to which the government is supposed to provide us either with a "job" or with some other source of revenue, we should soon be able to lower the tax-rate and the cost of living. When governments go beyond their proper sphere the result is misgovernment, and misgovernment is always far more expensive than legitimate government.

UNDER THE PROVISION OF THE SHEPPARD-TOWNER ACT THE FEDERAL GOVERNMENT WILL CONTROL THE EXPENDITURE OF STATE APPROPRIATIONS

How this can be done is plain to see from the testimony by Dr. Chas. E. Humiston before the Inter-State and Foreign Commerce Committee, when the Sheppard-Towner bill was on hearing before the Committee. The Chairman of this Committee, Mr. Winston interrogated Dr. Humiston as follows and the following personal comment was made by Chairman Winslow.

The Chairman: Doctor, I would like to have you elaborate a little more the answer which you gave to a question asked by Mr. Copper to this effect, as I understand it. Would the Federal Government under this bill through an appropriation have any control over the expenditure of the larger sum of money that might be appropriated by the state for its work. I will try to make my statement and then let you answer as you will. If the state of Illinois having a standard of its own and rules and regulations according, for the purpose of administering such a department in Illinois, should appeal to the Federal Government under some like conditions as those set forth in this bill, and in their rules and regulations should embody some principles which were not agreeable to the Federal control, here, it might be that the Federal control here

would say, "We will not give you any money," might it not?

Dr. Humiston: I do not understand that the Federal Government has everything to say about the expenditure of any money except what is appropriated by the general Government, and the like amount added to the fund by the State.

The Chairman: If you will follow me through now, we will save time and you can answer me as broadly as you will.

Dr. Humiston: I want to answer you directly.

The Chairman: If the State of Illinois comes for its share of money to the Federal Board, whatever it may be, and presents as provided in this bill, regulations, plans and so forth, not agreeable to the Federal Board, the Federal Board may refuse to give them money, may it not, up to that point?

Dr. Humiston: It specifically says so.

The Chairman: Then, the natural step would be for the Federal Board to say, "we want you to modify your plans so and so, and if you do we will give you the money." That would be natural, would it not?

Dr. Humiston: Yes.

The Chairman: Then, the State of Illinois, if it should take any money from the Federal Government is obliged, you have admitted, to change its plans, and by so doing it may have fallen short in its ideas of the way to administer this kind of work.

Dr. Humiston: Well, to separate those two—

The Chairman: (Interposing.) Kindly follow me.

Dr. Humiston: I am trying to.

The Chairman: I asked you if, in the expenditure of money of the Government, the State of Illinois would not then be obliged to follow to the letter the plans set forth here in Washington, whether Illinois believed that they were the best plans or not?

Dr. Humiston: Most assuredly.

The Chairman: That is the answer. If they operated, then, under this law, and took any money from the Federal Government, the State of Illinois would have to abandon any plan which it thought was the best plan in order to get it. That you will agree to. Now, if they do that, why does not the ruling of the Federal Government control the entire outlay of the state appropriation in the administration of this work, for the reason that you cannot know, in working under this plan, which dollar is being invested for hygiene, maternity and infant care?

Dr. Humiston: In effect, that is the way it would work out. The whole department of maternity and child welfare would be run in accordance with rules laid down here in Washington in order to get the money. The States would not have two plans of spending their own and the Federal Government's money. What it would amount to in effect would be direction and supervision by this Bureau of all the activities that had to do with this particular subject.

The Chairman: It would put the Federal Government in the position of appropriating, as Mr. Hawes suggested $40,000 of Federal money as against $2,500,000 of State money, and insisting that the Federal Government should control the whole matter.

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Charles H. Phifer
Frank J. Pokerney
J. F. Quirk
M. M. Ritter
E. W. Ryerson
C. F. Roan
W. A. Ribbeck
H. H. Ritenhouse
J. B. Ross
J. W. Russell
G. L. Rulifson
Geo. W. Rezanka
Anthony Rud
J. E. Rowan
E. E. Reininger
Frank J. Resch
R. L. Reynolds

Nils Remmen
Sol Rosenblatt
L. W. Rosenbaum
T. E. Roberts
Harold H. Roberts
John A. Robison
C. C. Rentfro
H. A. Ramser
O. T. Roberg
E. Ries
L. C. Schulze
M. J. Sullivan
A. W. Stillians
V. L. Sheets
Alva S. Sawyer
I. F. Stein
Otto L. Schmidt
Charles E. Scharf
Edward F. Slavik
Philo F. Snyder
Sylvia A. Sciarretta
W. F. Scott
W. G. Stearns
Joseph Semerak
Vesper Shaffer
C. B. Semerak
Robert Sonnenschein
Andre L. Stapler
C. O. Schneider
E. S. Stewart
Carl G. Swenson
H. J. Stewart
Charles P. Schell
V. A. Simpkus
Arthur Sanders
Grant W. Sill
A. M. Stobe
Wm. J. Siegler
Frank Smithies
John J. Stoll
A. C. Strunk
Carl F. Steinhoff
F. H. Steinhoff
H. J. Smejkal
Chas. L. Schmidt
F. E. Simpson
A. M. Shaw
Elmer E. Simpson
Chas. A. Stevens
A. W. Stillians
L. Ernest Schwarz
John J. Theobald
G. D. Theobald
H. M. Thometz
Frank F. Trombly
W. M. Thomas
Geo. F. Thompson
Max Thorek
L. L. Turner
H. Tetrev
F. D. Vreeland
W. VanHook
B. L. Vilna
Walter Verity
R. Von der Heydt
S. L. Weber
Joseph A. Waska
Will Walter
J. H. Walsh
E. W. Westland
John A. Wesener
Charles Windmueller
H. L. Wallin
H. A. Ware
B. E. Walpert
M. S. Wien
J. T. Woof
Theo. B. Wood
G. V. Wyland
S. H. Waterman
T. G. Wallin
Geo. W. Webster
A. A. Whamond
H. Woehlk
C. J. Whalen
K. N. Wakeberg
F. F. Wisniewski
T. M. Wiersen
T. J. Williams
C. F. Yerger
A. Yuska
T. Z. Xelowski
H. Zaczeck

NOTICE OF EXAMINATION FOR ENTRANCE INTO THE REGULAR CORPS OF THE UNITED STATES PUBLIC HEALTH SERVICE

Examinations of candidates for entrance into the Regular Corps of the U. S. Public Health Service will be held at the following-named places on the dates specified:

At Chicago, Ill.....March 12, 1923
At San Francisco, Cal.....March 12, 1923
At Washington, D. C.....March 12, 1923

Candidates must be not less than twenty-three nor more than thirty-two years of age, and they must have been graduated in medicine at some reputable medical college, and have had one year's hospital experience or two years' professional practice. They must pass satisfactory physical, academic, and professional examinations before boards of commissioned medical officers.

Successful candidates will be recommended for appointment by the President with the advice and consent of the Senate.

Requests for information or permission to take this examination should be addressed to the Surgeon General, U. S. Public Health Service, Washington, D. C.

H. S. CUMMING,
Surgeon General.

PHYSIOTHERAPEUTIC WEEK IN KANSAS CITY

The fifth annual meeting of the Western Electro-Therapeutic Association will be held in Kansas City, Missouri, Thursday and Friday, April 19 and 20, under the presidency of Dr. T. Howard Plank of Chicago. A cordial invitation is extended to the medical profession.

PRELIMINARY PROGRAM

1. President's Address, Dr. T. Howard Plank, Chicago.
2. High Frequency Currents, Dr. J. E. C. Waddington, Detroit.
3. Paper, title unannounced, Dr. H. H. Bowing, Rochester.
4. Actinic Ray Therapy in Surgical and Gynecological Work, Dr. A. Davis Willmoth, Louisville.
5. Demonstration Radiotherapeutic Technique, Dr. J. D. Gibson, Denver.
6. Illiel Stasis and Restoration of Illeocecal Incompetency (illustrated lantern slides), Dr. F. H. Morse, Boston.
7. Colitis; Causative Factors and Therapy, Dr. Curran Pope, Louisville.
8. Physiotherapy, An Adjunct to Orthopedic Surgery, Dr. J. E. M. Thomson, Lincoln, Nebr.
9. Paper, title unannounced, Dr. B. B. Grover, Colorado Springs.
10. High Frequency Currents (with demonstration), Dr. Omar T. Cruikshank, Pittsburgh.
11. Radium Therapy, Dr. Sanford Withers, Denver.
12. Paper, title unannounced, Dr. E. H. Skinner, Kansas City, Mo.

The Western School of Electro-Therapy will hold its fifth annual session, under the direction of Dr. B. B. Grover and associates, Monday, Tuesday and Wednesday, April 16, 17 and 18. On Wednesday evening Dr. Pope will give a lecture on "Mendelian Heredity" (with lantern slides). An elaborate exhibit of physiotherapeutic apparatus will be held in the lobby of the theatre, and this feature alone will be worth a trip to Kansas City. Clinics and demonstrattion of technique each afternoon and evening. For program address the secretary, Dr. Charles Fassett, 115 East 31st St., Kansas City, Mo.

TO THE PHYSICIANS OF ILLINOIS

The Tri-State District Medical Association comprising states of Iowa, Illinois, Wisconsin and Minnesota, and districts of surrounding states intend to run a clinic train East the last two weeks in April.

It is the wish of the organization to give the physicians of the middle west an opportunity to attend the clinics, which are to be conducted by the members of the Teaching Staffs of the following universities: Harvard, Yale, Johns Hopkins, Columbia, Bellevue,

Cornell, University of Pennsylvania, Jefferson, Western Reserve (Cleveland), and the Walter Reed Hospital, Washington, D. C.

The clinics are being arranged in advance so there will be no loss of time, and will cover the different branches of medicine and surgery.

The cost of the trip will be $169.46 for upper, and $173.89 for lower berth, this includes Railroad fare, Pullman service, nine nights in first-class Hotels in the clinic cities and clinic arrangements. The clinicians of the Universities are arranging to give the physicians a fine treat in the way of instruction, and a large number of physicians have already made reservations.

The Association is a Democratic Post-graduate Organization, and any physician in Illinois who is in good standing in the State Society will be taken care of if possible on the trip, on conditions that he communicates with the Secretary of the Organization at once in regard to reservation. It will be impossible for us to hold open the reservations for any length of time.

D. G. Smith, Secretary-Treasurer. W. B. Peck, Managing Director.

THE SAN FRANCISCO CONVENTION SESSION OF THE AMERICAN MEDICAL ASSOCIATION AS A STARTING POINT FOR VARIOUS TOURS

The California Convention Headquarters of the American Medical Association, working with the various tourist agencies, civic and commercial organizations, are arranging plans whereby the San Francisco Convention will be the starting point for a number of tours:

One of these will be a three weeks' trip to Honolulu, on a special boat touching at all of the principal ports, including the Leper Colony, and returning to San Francisco.

Another trip under contemplation is up the West Coast of the United States to Alaska and return, allowing returning passengers to leave the boat at Vancouver and travel over the Canadian Pacific East, or at Seattle over the Great Northern Railroad; at Portland and thence East by a number of lines or to San Francisco and Los Angeles or San Diego and back East by any of the numerous lines; or connecting at San Francisco with boats that will return East through the Panama Canal.

Arrangements are also being planned by which persons may begin an entire Oriental tour, starting from the Convention a day or so after its close. These trips will include Japan, China, the Philippine Islands and return to San Francisco, or one may go on through the Suez Canal and Europe.

In fact, any and all sorts of combinations of tours to take up as much vacation as one cares to use and to any part of the world will be one of the features easily arranged in connection with the Convention.

Persons interested in any of these points or in any other matters connected with their trip to California are requested to write W. E. Musgrave, Chairman of the Local Committee of Arrangements, 806-809 Balboa Building, San Francisco.

VARIOUS TRIPS FROM SAN FRANCISCO WHICH A. M. A. VISITORS MIGHT BE INTERESTED IN

Trip No. 1 Twenty-one Days to Hawaii and Return

This trip includes a visit of six days in Honolulu with sight-seeing trips to all parts of the city and on the Island of Cahu and two days in Hilo and the Kilauea National Park, with a visit by day and night to the famous active volcano of Kilauea National Park. This is the easiest volcano to visit in the world and it alone is worth the trip to the Islands. This is the most beautiful time to visit Hawaii, as the flowering trees and shrubs are all in bloom, vying with each other in their profusion of bloom and riot of color. The cool trade winds continually fan your cheek and the nights are soft and balmy while the water of the ocean ever invites you to revel in its warm embrace.

Trip No. 2 Twenty-four Day Cruise to Alaska

Leaving San Francisco by boat or train for Seattle where a day is spent in sight-seeing, proceed from Seattle by boat through the inside passage (one of the most beautiful water trips in the world), calling at Ketchikan, Wrangell, Petersburg, Taku Glacier and Juneau, till you arrive at Skaguay, where you disembark for a railroad trip to Bennett Station and return to catch the boat for Sitka, the quaintest and most interesting city in Alaska. Leaving Sitka, travel for six days through the inside passage till you arrive at Seattle, where four days will be spent in a side trip to the beautiful Ranier National Park. Returning to Seattle you embark by train or rail for San Francisco or points east. There are indications that this will be a very big Alaska year, so early reservations should be made for this trip.

Trip No. 3 Three Weeks National Park Trip

This trip embraces the Pacific Northwest, including Yellowstone, Glacier and Ranier National Parks, with a possible optional trip to include Crater Lake National Park. Going east from San Francisco via the famous Feather River Canyon to Salt Lake City, where a day will be spent in visiting the Mormon Temple, Saltair and other places of interest, thence to Yellowstone for six days. A trip through the beautiful Flathead Lake country brings you to Glacier Park for a stay of five days. From Glacier Park proceed to Seattle, from where a motor trip will be made to Rainier National Park for a three-day stay. Returning to Seattle, we proceed to Portland, where we take the wonderful Columbia River Highway drive through the famous Hood River country. From Portland return to San Francisco via the Shasta Route, stopping en route for a two days' visit to Crater Lake Park.

Trip No. 4 Four Weeks in the Canadian Rockies

This is the most comprehensive Pacific Northwest Tour that has ever been offered to the lover of the great outdoors.

Leave San Francisco by the Shasto Route for Port-

land, where one day will be spent on the Columbia River Highway drive; you then entrain for Spokane, where you will spend the night. Leaving early in the morning you proceed to Kootenay Landing, thence by boat over the Kootenay and Arrowhead lakes. The following day resuming the trip by train through the incomparable Canadian Rockies to Banff, where you will spend four days in motoring to all points of interest, including Johnson Canyon, Vermillion Lakes, the Valley of the Ten Peaks and Lake Minnewanka.

Motoring from Banff to Lake Louise, you will spend two days at Lake Louise and environs, thence to Emerald Lake and Glacier, giving a day to each. From there you proceed to Jasper Park, where four days will be spent at the foot of Mount Robson, Canada's Matterhorn.

Proceed from Mount Robson to Prince Rupert, the western terminus of the Canadian National Railroad. Here you board the steamer for Stewart, seven hundred miles of the inland passage, thence by motor to Hyder, Alaska, an old mining town.

Returning direct to Vancouver by boat, one day will be given to sight-seeing, thence to Victoria, "A little bit of England." After two days spent on Vancouver Island, you will proceed to Seattle, where you will entrain for San Francisco or the East.

Many trips of shorter duration to Yosemite Valley, Lake Tahoe and other points of interest in California can be made, and we will be glad to furnish information on any of these trips. Inquiries about this or any other subject should be addressed to W. E. Musgrave, Chairman California Committee of Arrangements, 808-809 Balboa Bldg., San Francisco.

UNITED STATES TURNS TO DOCTORS FOR AID IN DRUG FIGHT

All Hope of Solving the Drug Addiction Problem Lies in the Medical Profession—Narcotic Authorities Plan to Broaden Regulations to Encourage Physicians to Treat Addiction Victims—Medical Conference Urged.

At the hearing before the House Foreign Affairs Committee the latter part of February much data of value was presented and as a result the federal authorities have decided upon immediate steps for solution of the problem. The *New York Tribune* of February 24th in commenting upon the hearing before the House Foreign Affairs Committee said:

The widespread discussion of the narcotic drug situation recently brought out before the House Foreign Affairs Committee appears to have determined the Federal authorities upon some immediate steps for solution of the problem.

Several government officials, charged with the enforcement and administration of various phases of the drug laws, it was learned yesterday, have indicated their willingness and readiness to consider suggestions from the medical profession for possible revision of the present statutes in the light of the latest knowledge on drug addiction. Scientific experts have complained that the rules and regulations attached to the enforcement of the Harrison narcotic act have practically eliminated the general medical practitioner from the care of addicts, driving the vicitims to the underworld peddler for their drug supplies.

REGULATIONS REVISED

In an apparent effort to remedy, in some measure, this condition, a representative of *The Tribune* was informed that the solicitor for the narcotic section of the Bureau of Internal Revenue has already revised those regulations affecting the treatment of addicts by physicians, and that the changes were now awaiting the signature of Prohibition Commissioner Haynes before promulgation.

Colonel L. G. Nutt, chief of the Narcotic Field Service, with headquarters at Washington, said that the revisions were designed to broaden the policy of the bureau with regard to the extent physicians will be permitted to prescribe for drug sufferers. It was intimated that under the new rulings the medical practitioner would be given greater liberty in the handling of addicts than is now afforded under the regulations.

The scientific authorities, however, look to more radical measures for effective solution of the problem and have been assured by certain high government officials that any suggestions in this direction would be gladly considered. It is known that Dr. Lester D. Volk, Congressman from Brooklyn, who has for a long time been interested in the drug situation, was yesterday in touch with the Washington authorities, who, he said, stood ready to proceed with any steps deemed desirable and necessary for immediate relief of the drug situation by the medical profession.

Dr. Volk said that a movement was now on foot to obtain concerted action on the part of the representative leaders of the profession and that a conference of medical experts with Federal officials would probably be held in the near future to determine what changes in the Federal statutes or regulations were necessary for a more effective handling of the addict.

"You can say for me," said Prohibition Commissioner Haynes, "that I will be glad to receive suggestions for changes in the regulations from a representative body of the medical profession. You can say, too, that we shall be ready to make whatever revisions are deemed reasonable or desirable in the light of the latest knowledge and experience on the subject, and that for this purpose our doors shall always be open."

DEPRAVED IS POLICE PROBLEM

"Of course," Commissioner Haynes added, "there are several phases to the question which must be dealt with in a special manner. There is the degenerate, the depraved addict, the habitue of the

underworld. He is undoubtedly a matter for local and municipal handling. He is a subject for police control. Then there is the better class, the so-called decent addict, not a criminal, not degenerate, who should receive careful treatment in hospitals and sanitariums. If the medical authorities can show us that the regulations are not working for the best interests of the community, we shall be only too glad to make whatever revisions are necessary. I will be happy to meet any representative body of the medical practitioners and go over the matter with them."

HOLDS TO COURT RULINGS

Colonel Nutt did not say just what the changes in the present regulations would be. "It will broaden our attitude and policy with regard to the strictures placed upon the practitioner in the matter of the treatment of addicts," he explained. "There are certain decisions of the courts beyond which we cannot go," he said, "but the revisions contemplate a more liberal interpretation of certain of the rules. They are now before Commissioner Haynes for consideration and signature."

Congressman Volk asserts, however, that it will take more than a revision of the regulations to induce the general practitioner once more to take up the care of the 50,000 to 100,000 addiction sufferers in this city.

"There must be absolute assurance to the physician," says Dr. Volk, "that there will be no overnight changes in these regulations or their interpretation by subordinates. The physician who treats an addict in good faith and within his best judgment, must be freed from the danger of indictment.

"It is this fear of indictment by irresponsible and arbitrary subordinates that has driven the family doctor away from the addict and left the sufferer at the mercy of the exploiting underworld peddler. I can see only one way out of the difficulty, and that is a general, open conference of the recognized authorities on the subject with the Federal officials, with the idea of wiping out those strictures that are now declared to be largely responsible for the situation, and adding whatever amendments are thought to be helpful.

NEEDS OF SITUATION

"There are two main points that must be kept in mind with regard to the solution of the drug question. One is the prevention of the spread of addiction, and the second is the care of the 1,000,000 or 2,000,000 addicts we now have in the country. The resolution of Congressman Porter, chairman of the House Foreign Affairs Committee, seeking a reduction of the drug production throughout the world, while a worthy aim, does not consider the immediate relief of the addicts we have with us. Something should and must be done for these sufferers. I am glad to see the willingness of the authorities to recognize and act upon the immediate needs of the situation."

UNITED STATES ASSISTANT ATTORNEY GENERAL SAYS DRUG PROBLEM IS ONE FOR PHYSICIANS

Harrison Act Impractical — Assistant United States Attorney General Tells Congress It Cannot End Addiction by Treating Patients as Criminals

The *New York Tribune* of February 15 commenting upon the hearing before the House Foreign Affairs Committee says:

WASHINGTON, Feb. 14.—John W. H. Crim, Assistant Attorney General of the United States, appearing before the House Foreign Affairs Committee today in connection with the Porter resolution aiming to reduce narcotic drug production throughout the world, painted a discouragingly hopeless picture of the drug situation as it exists at this moment all over the country.

He asserted that the authorities have been trying to regulate the evil in an entirely impractical manner. If Congress, he said, had not attempted through the Harrison act to police the whole nation and regulate physicians under the guise of a tax law, and had confined its attention to interstate and international traffic in drugs, the country would have made much better progress in dealing with the problem.

As a matter of fact, he cautioned, it is not a problem that Congress can solve, declaring that the states and municipalities generally should do the "policing" themselves.

FUNDAMENTALLY MEDICAL

The drug addiction question, he contended, is fundamentally a medical one, and he could see no appreciable progress in dealing with it until the medical profession indicated what ought to be done. One can't treat an addict, a sick man, under a criminal law, he said, contending that under present rulings respectable addiction sufferers were being regulated out of the hands of physicians into crime.

As indicating the helplessness of the government to suppress the great illicit traffic in drugs he said it was utterly impossible to keep narcotic drugs out of the Federal prisons, and that things had come to such a pass that prisoners even made the instruments for their administration in the prisons.

"Unquestionably," said Mr. Crim, "the use of narcotic drugs has increased. I can say that of all the prisoners we are now sending to Atlanta, Leavenworth and other prisons about 40 per cent. are addicts. The war, I'm sure, has in a large measure been responsible for its spread.

"We've been trying to regulate it in an impractical way," remarked Mr. Crim. "Congress enacted the Harrison law on the theory that it could police the entire country and could regulate the physi-

cians and do general police work under the guise of a tax law.

ADDICT DRIVEN TO UNDERWORLD

"Coming down to basic facts drug addiction is fundamentally a pathological condition and until the medical profession tells us what to do we will make no progress. The law is regulating the addict out of the hands of the better class of doctors into the hands of a lower class of physicians and eventually into crime. Addicts appealing to physicians are told that they (the physicians) are being persecuted and that the sufferer must go elsewhere for relief. He is only too frequently driven to the underworld and eventually into prison."

Dr. Squire, of Sing Sing, said that the number of addicts admitted to the prison in 1922 represented an increase of 900 per cent. over the figures prior to 1919. He thought that the prisoners obtained 90 per cent. of their drugs from underworld peddlers and that heroin, as the drug most used in the underworld, should be eliminated.

Dr. Fowler told of the large number of decent persons in the higher walks of life who suffered from addiction and told of the many deaths resulting from inconsiderate withdrawal of the drug. He exploded many fallacies held with regard to the action of drugs on users, saying that after addiction set in there was no pleasure for the victim—it was all suffering—and that he was entitled to sympathy. He scouted the idea that it was a "vice" or merely a "depraved habit," as advanced by previous witnesses.

It was suggested by Representative Cooper that a statute should be enacted making a second offense for a drug peddler punishable by imprisonment for fifty years.

85 PER CENT. SMUGGLED

W. S. Blanchard, assistant in charge of the Narcotic Division of the Internal Revenue Bureau, offered that 85 per cent. of the illicit traffic within the last six months constituted drugs smuggled into this country from other nations. Chairman Porter believed that from 65 to 80 per cent, came from foreign countries.

BREAKING IT GENTLY

A premature explosion at one of the munition factories killed Casey, an employee who had recently moved into the town.

The foreman called for a volunter who would break the sad news to Casey's window gently and with as little shock to her as possible. O'Ryan volunteered to carry the sad tidings. Four men carrying the remains of Casey on a shutter, followed at a respectable distance.

O'Ryan knocked at the door.

"Des the widdy Casey live here?"

"This is Mrs. Casey, but I'm no widdy."

"The Hell ye're not; wait 'till yez see what's comin' up the road on a shutther."

Correspondence

THE REGULATION OF CONCEPTION

February 17, 1923.

To the Editor:

The Chicago Gynecological Society is desirous of giving proper publicity to its present stand on the subject of the regulation of conception. The following paragraphs are, therefore, submitted for publication:

In accordance with a resolution passed by the Chicago Gynecological Society, the undersigned committee sent to all of the members of the Society a questionnaire dealing with various phases of the general subject of regulation of conception. The replies were analyzed and submitted to the Society at its regular business meeting of January 19th and the Society unanimously approved of the following conclusions:

1. It is against public policy that information as to contraceptives should be given to the general public.

2. Information as to the prevention of conception should be given wherever indicated to wives and husbands by physicians, either privately or in existing clinics and dispensaries.

3. Special clinics for the dissemination of this information are neither necessary, nor desirable, nor should nursing organizations be utilized to give out such instructions.

4. Risk to the mother, based on ill health, whether due directly to existing disease, or to the drain of too frequent childbirth under unfavorable home conditions, is the essential indication for instruction in prevention of conception.

5. All mechanical devices used by the wife, as well as strong chemical douches, are discountenanced.

Respectfully submitted,

RUDOLPH W. HOLMES,
JOSEPH L. HAER,
N. SPROAT HEANEY.

A CROOKED ADJUSTER

About a month ago I was informed by the Secretary of the Local Ben Hur Organization that an officer of the Supreme Lodge was here to make final settlement with one of their beneficiaries because of a supposed total disability; also that this man wished me to examine this beneficiary. I then informed the local secretary that we (myself and associates) had finished this man's ex-

amination and made a complete record very recently and there was no need for further examinations. This information was given by the local secretary to the adjuster from the home office whose name is W. H. Owen, according to the business card which he left with the local secretary here and his association with the Supreme tribe of Ben Hur with home offices at Crawfordsville, Ind., according to this same card, is that of Supreme Organizer and his address as Crawfordsville, Ind.

I heard no more of this matter until a few days later, when the local secretary informed me that this man Owen had told him that he had been to the hospital and got the record in question and at the same time commented very favorably on the record from the standpoint of his purpose in the settlement. He also told the local secretary of the order, according to the latter's report to me, that he had taken this record out and had a copy made of it. These things had all occurred according to report 4 or 5 days before I knew anything of it, but on investigation I found that presumably this same man who represents himself as W. H. Owen came to St. Anthony's Hospital one morning between 8 and 9 o'clock.

On seeing Dr. Holman, one of my associates about the record, he was directed at the time to see me, as Dr. Holman knew he would not obtain the record. At the same time Dr. Holman told him that we would be in the operating room during the forenoon after 9 o'clock.

From the local secretary this man had obtained the information that we had examined his beneficiary and had a complete record on file; from Dr. Holman he learned that we would be in the operating room during the forenoon and by some other means unknown to me at this time he learned the name of our stenographer and perhaps her appearance, and so on, in such way that on her arrival at the hospital he was waiting at the front door and greeted her immediately as our stenographer and told her that I had gone to the operating room and I had told him to inform the stenographer that she was to give to this man the history of the beneficiary in question. He did not tell her why he wanted this record or who he was, but did tell her that he had seen me and that I had left word for her to give him this record because I was too busy myself to attend to it; came into the private office and made himself very much at home and by his talk and demeanor intimated that we were very good friends. She got the record for him under these conditions. I had frequently had her obtain records from the file for interested doctors to look over and had at times told a given doctor to ask her for the record and it was given and so on, which perhaps explains in this instance why he obtained the record.

The fact is that I had not seen this man at all and no one had promised that he would be given the record or had told him to obtain the record from the stenographer. This was all a scheme of his own which worked, and because it did so, I am taking this opportunity to warn other doctors against this man and his methods in this instance. As smoothly as he handled the matter in this case it would seem to indicate that it is an old trick with him, though I have no knowledge of his earlier dealings first hand.

Immediately I wrote to the Supreme office of the Tribe of Ben Hur at Crawfordsville, Ind., three or four weeks ago, and up to this time have had no word from anyone in regard to the matter. It has apparently been ignored, which would seem to indicate that it has been considered a cute trick and the matter dropped.

It so happened that this was a very important and private record and it is unbelievable that anyone possessed of the elements of real manhood would take such underhanded methods of obtaining information, which he evidently knew he would not obtain by seeing me.

We have been informed by attorneys that about the only recourse we would have at law in this matter that we might be able to collect a little damage money if we could show we had actually been damaged in this matter; in other words, the courts would seem to consider it a cute trick that worked with practically no effective recourse on our part against these destardly practices of shyster insurance men.

I wish to say too that our records, while kept in St. Anthony's Hospital, are in our own private files and in our own rooms, and under the control of no one but ourselves, as this is where all of our examinations, general, laboratory and otherwise, are done by our own group of associates.

With thanks to the editor for publishing this letter, I am, Very truly yours,

F. Buckmaster, M. D.

Original Articles

SOME RELATIONS OF THE NOSE TO THE EYE AND EAR*

B. F. Andrews, M. D.

CHICAGO

Much has been written on the more apparent relations between the nose and its neighbors, the eye and ear. All are familiar with the nose as a drainage canal for the discharges from the eye, and the unhappy results of interference with this function by occlusion of the lachrymal duct at its nasal end, or by other obstructions in the nasal chambers. Who does not know the anatomical relation of the paranasal sinuses to the orbit—that the roof of the maxillary sinus forms the floor of the orbit, while the floor of the frontal forms an important part of its roof; that the ethmoid labyrinth is separated from the orbit by that thin paper-like plate of bone, the lamina papyracea? Or that the optic chiasm lies just above, and the other nerves supplying the musculature of the eye are in close relation to the sphenoid sinus? With what frequency infections of these cavities invade the orbit and interfere with the functions of intraorbital structures we are all more or less cognizant.

Likewise we have realized the less intimate, though no less important anatomical relation of the nose by contiguity of structure, through the pharynx and eustachean tube, to the ear. This importance has become emphasized as we observe that practically all ear affections, outside of traumatic ears, have their origin in the nose or its companion in crime, the pharynx.

Appreciating then, the grosser anatomical relationships that exist between the nose and its companions, the eye and ear, and the role that microorganisms play in purulent diseases of these organs, it is not my purpose to dwell at length on these phases of the subject, but to point out, as best I may, and emphasize other relationships, not so apparent perhaps, which have to do with disturbances of function of these organs.

Let us take up first disturbances of vision with reference to intranasal conditions.

A group of cases of considerable size, and well recognized by ophthalmologists, is one characterized by dimness of vision, through failure of accommodation, lenticular astigmatism or both combined,—of erratic vision. This group is baffling to even the most skilled of refractionists. Its members will accept a given correction, wear it with satisfaction for a time, and then discard it. Other corrections follow with the same ultimate result. No two examinations of the same individual in the series give the same result, and when a pair of lenses is once discarded, it is not usually accepted again.

Failure to secure satisfactory results in these cases should not be charged to carelessness on the part of the refractionist, nor to lack of skill. The cause of this erratic condition should be looked for outside the eye.

In the search for the cause, the nerve mechanism that controls the intrinsic eye muscles, viz. the ciliary and orbicularis iris, should be kept in mind. These muscles receive their nerve supply from the ciliary ganglion. So any impulse reaching them originates either in the brain or outside the brain. If it comes from the brain, the act is voluntary, and accommodation is accomplished normally. If, as in the group under discussion, the stimulation originates outside the brain, the muscular disturbance is involuntary, and therefore reflex, and may result from faulty curvature of the crystalline lens and improper accommodation, or irregular curvature of the lens and astigmatism or both.

Muscle reflexes are brought about through reflex arcs. A reflex arc consists of a ganglion or series of ganglia connected by interganglionic nerves; afferrent sensory nerves arising from sensory areas; and efferent motor nerves from the ganglion to the muscle affected.

Tracing back then, the motor nerves from the intrinsic eye muscles, the ciliary ganglion is encountered. From here an interganglionic nerve passes to the sphenopalatine ganglion. This receives afferent sensory nerves from almost all parts of the nasal mucosa, including that lining the accessory cavities, and also from the tonsils.

It can readily be understood, therefore, that any stimulus, whether mechanical, thermal, bacterial, chemical, climatic or what not, applied to

*Read before the Section on Eye, Ear, Nose and Throat, Illinois State Medical Society, Chicago, May 17, 1922.

the sensitive nasal mucosa, may result in disturbance of the action of the intrinsic muscles of the eye and faulty vision, and that this disturbance is likely to continue until the cause is overcome, and that because of the changed conditions in the nose the eye findings vary at different times.

However, not all stimuli originating in the nose manifest themselves in disturbance of vision. Localization of nasal areas has not progressed far enough to say just what results will follow stimulation of a given area. Nor, vice versa, just what area has been irritated, from the effect produced. It logically follows, therefore, that all sensory areas, impulses of whose stimulation may reach and act upon the intrinsic eye muscles, should be examined.

For some reason not yet explained, not all nerve impulses originating in the nose reach the eye. Some seem to be switched onto the interganglionic nerve in the sphenopalatine ganglion which connects it with the otic, and there are sent out through the efferent nerve to the tensor tympani muscle, resulting in overtension of the drum membrane, and consequent lessening of the function of hearing.

If the reasoning regarding the nervous relation between the nose and eye is true, that between the nose and ear is equally true, and it may be necessary for us to change our theory as to the etiology of that symptom-complex, misnamed "dry catarrh of the middle ear," whose three cardinal symptoms are retraction, deafness and tinnitis, from that of eustachean closure, to that of nerve stimulation of some sensory region, resulting in reflex action of the tensor tympani, viz. retraction, increased labyrinthine pressure and deafness. This theory explains more satisfactorily the phemonena presented than does that of eustachean closure.

While discussing the nerve relationship between these organs, that of the sympathetic should claim some attention.

The sympathetic nerve system presides over the circulatory system controlling all glandular action whether of duct or ductless, and also the vital processes. The three ganglia mentioned above are connected through the cervical ganglia with, and form a part of, the great sympathetic system. Each receives nerve supply from blood vessel, passes it on to vessel, ganglion or gland.

Observation without argument is sufficient to prove that an irritation at one point often manifests itself in hyperemia or glandular action at some more or less distant region. Proof, tears from intranasal irritation. Dilatation of pupil from stimulation of the superior cervical ganglion.

Long continued irritation of a given area means long continued disturbance in the circulation of the distant area involved. This disturbance is first hyperemia, then hypertrophy and lastly atrophy—all trophic changes.

This relationship may supply the reason for failure of some troublesome corneal ulcers to heal, despite all local treatment, until the intranasal pathology is eliminated. It may explain why pterygiums grow and phlyctenulae appear. It may point to the reason why some cases of retrobulbar neuritis result in almost total blindness, and recovery after the exciting irritation has been removed from the nose. And may it not explain other phenomena as yet unexplained?

Turning the attention to the ear again, What more satisfactory explanation of the cause of otosclerosis can be found, than that of the sympathetic nervous hypothesis? Viz. Along continued irritation at some place more or less distant from the ear, as for instance the nose, the tonsil or the pharynx, but directly connected with it through the sympathetic nerves, setting up first a hyperemia, then retrograde bony changes resulting in sclerosis of the bony capsule. Whether the retrograde process begins within the labyrinth and progresses outward, or begins on the tympanic wall and proceeds inward, the primary cause is the same, and should be sought outside the ear. Theoretically, the cause should be found, as has been suggested, in some region intimately related to the ear through the trigeminus and sympathetic ganglia.

If this sympathetic hypothesis holds with reference to otosclerosis, experience has proven that there is little hope of improving the ear conditions and the hearing by operation in the nose or throat after the process is well established, but that its value lies in the fact that these causative relations are known, and that all pathological conditions in the nose and throat should be corrected early as a preventive measure.

25 East Washington Street.

THE SURGICAL RECONSTRUCTION OF THE PARALYTIC UPPER EXTREMITY*

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The special problem selected for demonstration is that of restoring function of the paralytic upper extremity by means of surgical procedures.

From a practical viewpoint, the functional value of upper extremity depends largely upon the execution of a certain number of cardinal movements and a series of movements of secondary order. The restoration of the cardinal movements stands naturally in the foreground of interest.

The most important movements of the extremity are:

1. The power of abducting the arm; this gives the total extremity the proper sweep and reach from the shoulder joint.

2. The flexion of the elbow; this controls the motion of the forearm in placing it at different levels suitable for the action of the hand.

3. The hyperextension of the wrist; this is the proper position to display strength and endurance for the fingers as well as for the thumb.

4. The closing and opening of the fingers together with the ab- and adduction of the thumb; this imparts to the hand as the working organ of the extremity the power of gripping and handling objects.

In comparison with these, the other motions of the shoulder, elbow, forearm, such as adduction, rotation, extension, and flexion in the shoulder, pro- and supination of the forearm, while of considerable importance by themselves, are comparatively of lesser import and must therefore take second rank in surgical considerations. In the end, all types of movement are subservient to the work displayed by the hand and fingers, and one must therefore judge the possibilities of rehabilitating the disabled member from the degree of function, attained or attainable, for hand and fingers. In the case of the paralytic upper extremity, the greatest single factor leading to this disability is anterior poliomyelitis. Ninety per cent of our cases of upper extremity paralysis were due to this cause. Next to it, traumatic paralysis such as injuries to the plexus or peripheral nerves, came into consideration.

As to anterior poliomyelitis, we have found among our material of 1,100 cases, approximately 100, or 9 per cent in which the upper extremity was involved.

Not less than 80 per cent. of these cases show paralysis of the deltoid muscle. The permanent paralysis of this muscle causes definite disability of abducting the arm. No adequate substitution of this movement by other auxiliary muscles is possible.

The flexion power of the elbow due to paralysis of the biceps, brachialis anticus, and supinator longus, is lost in 50 per cent of the cases in which deltoid paralysis is present. The disability of the arm now becomes greatly increased. The member, incapable of being abducted from the body, is also without control of the different working levels for the hand. It is hanging helpless at the side of the body and depends upon the other extremity to lead hand and fingers to the proper place where they may display action.

The extension power of the wrist is lost in approximately 25 per cent of the cases of paralytic upper extremity. Inability to extend the wrist means the loss of tension for the flexors of the fingers and the thumb, even though the muscles of the fingers be not paralyzed themselves, and this again induces a degree of weakness of the hand which greatly interferes with their functional value. The loss of the opposition of the thumb due to thenar palsy is encountered in approximately 10 per cent of the cases of upper extremity. The hand appears flat and the gripping power is greatly impeded by inability to oppose the thumb.

We have then, shortly, the following single problems to deal with:

The Flail Shoulder; the Flail Elbow; the Drop Wrist; Flat Hand.

I repeat that the discussion of these conditions is explicitly limited to such cases in which the disability remains permanent, that is, in which conservative treatment even properly and timely applied and extended for a suitable period does not recall the lost action of the muscles.

For the past five years, we have given extensive study to the problem of dealing with the disability in a definite surgical way. Various surgical procedures have been carefully investi-

*Read before Tri-State Medical Association at Peoria, Oct. 30, 1922.

gated, experimentally and clinically, until a definite policy has been developed.

We find that the permanently flail shoulder is best dealt with by arthrodesis. The arthrodesis is applicable in patients from 10 years up. The position of the arthrodesed joint is slight forward flexion and 90 degrees abduction in children; slight forward flexion and 70 degrees abduction in adults. The time of fixation following operation is six months, of which three are spent in a plaster of paris cast and three more in abduction splints, with the addition of muscle training and massage in the latter period. The operation itself is based upon the proposition that all necessary motions of the arm may be controlled by musculature of the shoulder blade which usually escapes paralysis. The musculature of the shoulder blade is so arranged that in moving the scapula, all positions into which the arm itself can be moved, can be assumed. The scapula aligns itself with the humerus in all directions.

The pre-supposition of a good operative result is fusion of the shoulder joint, bony fusion being much preferable although fibrous fusion does not by any means preclude good functional end result.

Inability of flexion in the elbow may be treated surgically by a transposition of the flexors of the wrist from their point of attachment at the internal condyle of the humerus to a point two inches higher up in the intermuscular septum. The physiological foundation of this method lies in the fact that these muscles normally exert a very slight flexion action of the elbow. It is normally very insignificant, owing to the short leverage represented by the insertion of these muscles close to the axis of the joint. On the other hand, transposition of the origin of these muscles to a higher point upon the humerus materially increases the flexion power of this muscle group. The operation is followed by immobilization in a flexion splint, to which massage and muscle training is added in the course of a few weeks.

For the drop wrist deformity, the method of arthrodesis of the wrist joint has been given the preference. Tendon transplantation is by no means excluded, but reserved only to those cases in which enough muscle power is left to serve the extension of the wrist as well as that of the fingers. To this group belong some of the traumatic cases. In most of the poliomyelitic cases, however, the extensor paralysis is so extensive that muscle material available for transplantation becomes lacking. The arthrodesis of the wrist in the suitable position of slight hyperextension furnishes then the proper physiological position in which the fingers display action to the best advantage.

The problem of the so-called flat hand or the hand in which opposition of the thumb cannot be carried out can be solved by a simple muscle plasty. It consists in the use of one-half of the preserved long flexor of the thumb made to serve as opponens of the thumb by swinging it around the metacarpal, and fastening it dorsally to the base of the basal phalanx of the thumb. This is the operation employed with preference in cases of thenar palsy.

Other operations have been carried out for the relief of different phases of the disability, as the case would require, but time does not permit me to go beyond the description of these four most frequently employed procedures, each of which serves for the restoration of a distinct detail in the paralysis of the extremity. All operative procedure should be regarded as the introduction of the treatment. The aftertreatment is to be regarded of paramount importance in the conduct of these cases. Fusions of joints such as are involved in the operation on shoulder and wrist require time and rest. This is done by careful immobilization. When new muscles are called upon to take over the function of paralyzed ones, careful muscle education by means of massage and muscle drill exercises are indispensable. This may be illustrated in the case of arthrodesis of the shoulder, when the active abduction of the arm is taken over by the trapezius and serratus magnus muscles. Also, in the muscle transposition of the elbow, when the forearm flexors, now flexors of the elbow, must be educated carefully for a new task. The same is true of the function of the flexor of the thumb as opponens pollicis and of other operative procedures.

About 40 cases of arthrodesis of the shoulder have been carried out in the last few years, and of those over 12 years of age, the great majority showed complete bony fusion, attended by good functional results. In a few of the younger patients, the results were poor because of incomplete fusion mainly due to the difficulty of obtaining fusion before the age of 10.

About 30 operations of flexor plasties of the elbow were performed with about 70 per cent. good results. The failures were due largely to weakness of the flexors of the wrist and fingers which were used as transposition material. It is very necessary that one should satisfy oneself that the action of the flexor muscles is good; with the flexors of the hand also paralyzed, the operation to be performed would be not that of muscle transposition but rather arthrodesis of the elbow joint also.

Of 40 cases of arthrodesis of the wrist, about 70 per cent. showed good functional result and stable wrist. Those which did not show a stable wrist were either younger children in which the arthrodesis is difficult to perform or spastic cases in which immobilization is most difficult. We now do not perform it under the age of 10. The arthrodesis of the wrist is also difficult in some cases of spastic paralysis because of the impossibility of securing complete fixation for the arm even in plaster of Paris.

Of 15 cases of flexor plasty of the thumb, good results were obtained in about 80 per cent. The failures were due partly to faulty technique and partly to mistakes in the aftertreatment, especially the proper splinting and bandaging following operating. (Details of the operation and some of the operative results were shown in moving pictures.)

REPORT OF TWO CASES OF PLACENTA PREVIA IN WHICH CESAREAN SECTION WAS DONE.*

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Before presenting to you my case reports, I would like to refresh your memory upon a few points, on the condition, or abnormality, of the pregnant woman, known as placenta previa.

Placenta previa is the development of the placenta in part, or wholly within the zone of the dilatation of the uterus.

Ordinarily there are only three varieties of placenta previa described, namely; placenta previa centralis, placenta previa lateralis, or partialis, and placenta previa marginalis. But DeLee mentions a fourth, placenta cervicalis.

In the first named, placenta previa centralis, the internal os is completely covered by placental tissue, which is adherent to its margins.

In the second, or placenta previa lateralis, the placenta encroaches more or less upon the os, but does not completely cover it.

And in the third, or marginalis type, the placenta is higher up in the uterus, and it is only palpable after the cervix has undergone a certain amount of dilatation.

In the fourth type, or placenta previa cervicalis, mentioned by DeLee, and perhaps other authors, the placenta is situated partly within the cervix. I think this last mentioned condition is really only a modification of a centralis, or lateralis, after a certain amount of dilatation has taken place.

Strictly speaking, the first and second varieties are the only types of placenta previa.

As in the third type, the placenta does not overlap the os during pregnancy, and it is usually of little consequence.

But in the first, and second types, and especially, the first type, or placenta previa centralis, we will have upon the dilatation of the cervix, and the separation of the placenta, hemorrhage; which is unavoidable. The two cases which I am about to report were of this type.

Concerning the etiology of placenta previa, comparatively little is known; two factors, however, seem to stand out as the cause, namely, endometritis and multiparity. Especially the latter, where the children come in rapid succession.

Fortunately placenta previa is a rare complication of pregnancy, and as statements as to its frequency vary so much I will not dwell upon that. Placenta previa is a formidable complication of pregnancy, and usually sacrifices more lives annually than appear in the public statistics. Fortunately we possess rational and certain methods of treatment for this accident, which cannot be said of some of the other complications of pregnancy.

In deciding upon the treatment of placenta previa, many factors may be taken into consideration; the surroundings, generally, whether or not the patient can be placed in a hospital; the degree of the previa, whether it be partial, or total; whether the patient is in labor or not, and the amount of dilatation, the condition of the pa-

*Read at 48th Annual Meeting, Southern Illinois Medical Association, Cairo, Ill., Nov. 2, 1922.

tient, and above all, the amount of blood she has lost.

In practically all cases of pregnancy, in which placenta previa presents itself, the pregnancy should be terminated as soon as the diagnosis is made. There are several methods for this procedure, but as my time is limited, I will not mention these in detail.

But as the most of them are slow and difficult to perform, they are objectionable on account of the loss of time and the resulting loss of blood, which jeopardizes the life of the mother as well the baby.

The main factor is the saving of time and, consequently, the saving of blood.

From my own experience, and after the thoughtful consideration of the published experience of others, in my opinion there is only one mode of emptying the uterus, and that is Cesarean section.

I will now report to you two cases, in which Cesarean section was done.

Case 1. Mrs. B., aged 25 years; married one year; primipara; weight about 170 lbs.; family history negative.

I was called to see this woman about 4:00 P. M. July 3, 1917, and found her in labor; she was having some pains; there was practically no dilatation of the cervix, but some hemorrhage. The patient was nervous, restless, pulse 120, and volume not good. Patient had a rather syanotic appearance, with quite a bit of dyspnea. From the above mentioned symptoms, I made a diagnosis of placenta previa, and immediately called up the Walbright hospital twenty miles away, and instructed the head nurse to prepare for a Cesarean section. Then placed the patient in an automobile, and drove her to the hospital, where with Dr. G. W. Walbright we did a Cesarean section, delivering a live ten-pound boy baby. And upon examination the placenta was found to be completely over the os, or placenta previa centralis. The patient was on the operating table but thirty minutes, and made an uneventful recovery. And the baby lived also.

Case 2. Mrs. E., aged 38 years, multipara; mother of eight children; family history negative.

Was called to attend her Aug. 14, 1922, 1:00 A. M. Upon entering the room, the patient presented to me the following features: was pale, anemic, restless, nervous, respiration rapid and shallow, pulse very rapid and weak, almost imperceptible. The patient was then in a state of shock from the excessive loss of blood, and was yet bleeding profusely. Her night dress, and also her bed clothing were completely saturated with blood.

Upon vaginal examination, I found the os slightly dilated, and a placenta previa centralis.

I immediately called into consultation Dr. G. W. Walbright of the Walbright Hospital, and Capt. C. C. Starkes of the Walter Reed Hospital, Washington, D. C., who happened to be spending his vacation in our city at this time. They verified my diagnosis. We immediately inserted a tampon, and raised the foot of the bed about two feet, then administered about 400 c.c. normal salt solution intra-muscularily. We attempted to give the salt solution intravenously, but on account of the severe loss of blood could not obtain enough distension of the vein to insert the needle into the vein.

In the meantime we had the patient's brother, who lived twenty miles away, telephoned for, as a donor for her for the transfusion of blood. We removed the patient to the Walbright Hospital and prepared her for Cesarean section. She was placed on the table in the Trendelenburg position, and remained in this position throughout the operation.

At the beginning of the operation we again started the injection of normal salt solution intravenously, and administered about 500 c.c. of same. Following this the transfusion of 500 c.c. of blood from her brother, and during the operation 10 mm. of adrenalin was administered intravenously with the blood.

The patient was on the table exactly thirty minutes from the time the anesthetic was started, until the operation was completed.

Only seven minutes from the time of the first incision, until the baby and placenta was delivered. Leaving thirteen minutes for the closure.

A dead baby was delivered, apparently having been dead several hours. The placenta as in the first case was completely covering the os, or placenta previa centralis.

The patient died from shock and the previous loss of blood, shortly after the operation was completed. There was practically no loss of blood in this operation, as the assistant grasped and held the broad ligament, thereby preventing the loss of blood to any great extent.

From the above you can very readily see that in a case of placenta previa that is not already exsanguinated, that a Cesarean section is a relatively safe procedure, and a practical one.

But as in the latter case, where the patient was already in shock from the loss of blood, it was a futile attempt to save her life.

However, with the condition as it existed, what other procedure would have been safer?

As we well know it was only giving her a chance for her life.

The points that I would like to impress you with are these; that in a case of pregnancy, in which a diagnosis of placenta previa is made, that the main factors are the saving of time, and the saving of blood. And the sooner the uterus

is emptied, the better will be the result. And that Cesarean section is by far the quickest and safest procedure.

In conclusion, I would like to say that in this day of reconstruction, no problem in medicine should create a keener interest than that of the practice of obstetrics.

The great improvement in medical education of recent years, has come from knowledge gained from experience during the World War, hence the practice of obstetrics has not progressed with as much rapidity as the other specialties.

It has not kept abreast with medicine and surgery. I would earnestly make a strong appeal to all the members of our profession,who are practicing obstetrics, to unite in elevating its standards to an acceptable height, and to improve our technique, and place the practice of obstetrics in the rank where it justly belongs.

First National Bank Building.

THE DUCTLESS GLANDS IN RELATION TO CERTAIN DERMATOSES*

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It is scarcely necessary to refer to the growing importance of the internal secretions in general medicine. Where the glandular extracts are indicated they have a specificity second only to the antitoxins of various bacteria. With the increasing impatience on the part of the physician to the employment of uncertain, non-specific and symptomatic drugs, formerly practically all he had to employ, any substance which has a definite specific action is hailed with delight and widely used. There is no doubt that the lack of certain internal secretions causes serious symptoms and the administration of the glandular extracts will usually cause prompt amelioration and eventual disappearance of these symptoms.

Internal secretions and organo-therapy have still a vast field for research before them. We have not yet found out whether certain tissues or organs do have an internal secretion, whether such internal secretions, if present, are always specific, and therefore different from the secretions from all other tissues, or whether such secretions are so often similar to such an extent as to admit of one organ substituting for another. Certain organs have been proven to have a secretion during at least part of the life-cycle of the animal and to be very important to certain developmental processes, especially in relation to sexual maturing, after which they lose most of their importance, as far as we know. Cederkrautz, who has investigated the secretions from the generative organs and skin, holds that nearly every tissue and organ, if not every one, has its own internal secretion.

While we are unable as yet to demonstrate any direct action from certain tissues, and only a feeble action from others, that may be merely a failure to recognize the delicate action which these secretions may have.

The thyroid being an accessible gland and capable of palpation, etc., we necessarily attained considerable knowledge in regard to its function at a comparatively early stage. The importance of the thyroid secretion in metabolism is undoubtedly great, its absence or deficiency leading to a low level of oxidation, especially of fats, its presence in excess causing very rapid oxidation. Of course there are other symptoms besides the variation in metabolism rate. Some of these are probably due to the secretion of the gland, some to the failure of the gland to remove from the blood stream certain substances of toxic nature, some merely to mechanical effect and some, probably, to concomitant infection or affection elsewhere. Malcolm Morris made a study of the role of the thyroid in various dermatoses; he reported having successful results from thyroid-organotherapy in psoriasis, obesity, chronic rheumatism, infantilism, myxedema, rickets, pruritis essentialis, general and seborrheic eczema, ichthyosis, scleroderma, acanthosis nigricans, painful keloids, warts, acne rosacea and even other conditions and diseases. In some of these thyroid therapy is undoubtedly of value, in others it may have an indirect value; however, one cannot but believe that Morris' observations were faulty, owing to preconceived theories or excess of enthusiasm over some few coincidental occurrences.

Bullock and Sequeira claim that the hair may be much influenced by the thyroid and suprarenal glands. They reported a case of an eleven year old girl who quickly developed sexually with abundant growth of hair on face. axillae and pubes, due to hypernephroma, resulting in death a few months later. This sudden and premature

*Read before the North Shore Medical Society, Nov. 7, 1922.

ripening of the sexual nature, with developments of such sexual characteristics as growth of hair, change of voice, development of breasts and hips, establishment of menses, etc., have been noted in many cases of tumor-growth affecting the ductless glands, especially the pituitary, but also the thymus, thyroid, suprarenal and pineal.

The symptom-complex known as Addison's disease has been definitely proven to be of suprarenal origin. The bronzing of skin and mucosa and the falling of the hair, so characteristic in this disease are sometimes seen in much slighter degree in cases of partial failure of secretion of the suprarenal.

The symptoms due to excessive activity or hypersecretion of the thyroid and those due to lack of secretion are quite different. However, there are symptom complexes which are rather hard to explain on a simple basis of excess or deficiency of one single substance. This is more easily understood when we remember that the importance of the thyroid may depend upon more than a single substance in its secretion, as well as upon various substances of a toxic nature that it may take out of the blood and detoxicate. Moreover, there is an intricate relationship between the thyroid and the other internal secretions; the thyroid secretion is antagonistic in some respects at least to some of the other secretions while having a similar action to others. Thus the thyroid secretion, when deficient, is probably replaced to some extent at least by a compensatory hyper-secretion on the part of other ductless glands; it, itself, is probably increased when the secretion of these glands falls below normal; possibly the normal secretion acts as a hormone to promote normal secretion on the part of other glands, both those of a complementary and antagonistic action. Thyroid hypersecretion as typified by Basedow's or Graves' disease, often accompanied by exophthalmos, causes the skin to become thin, smooth, and moist, while the nails and hair are usually brittle. Dysthyroidism is seen in its typical form in myxedema; here the skin has undergone a mucoid degeneration and is thickened and firm, so that it does not pit on pressure: the underlying tissue is often swollen, causing enlargement particularly of the facial tissues. In this condition the hair and nails, too, often are affected. Schleroderma is believed by many authorities to be a manifestation of a dysthyroidism.

Alopecia areata and acne have been thought to be connected with a hyperactivity of the generative glands, coming as they often do at adolescence or at the climacteric. It certainly would seem that there is some connection between either a hyperactivity or hypoactivity of ovaries or testes and such conditions as acne juvenalis, chloasma uterinum and various menstrual, pregnancy or parturition exanthemas.

The pituitary gland has a relationship to certain changes in the skin. Thus in those cases of acromegaly due to disease of the pituitary gland there is usually a thickening or pigmentation of the skin, with increased activity of the sweat-glands, and either increased or decreased growth of hair.

The thymus gland normally atrophies during childhood; where it persists it causes lymphatic state, or thymus lymphaticus, often accompanied by changes in the skin and adnexa. A quite characteristic symptom is the paleness of the skin. The hair is sometimes quite undeveloped, sometimes only partly developed; often there is heterosexual hair growth. The connection between the thymus and the generative organs is believed by some to hold the explanation of acnes and seborrheides in adolescent youth.

Our knowledge of certain other skin conditions is still so vague as to preclude the use of the gland preparations in more than a few cases except as an experimental matter. In my own experience I have used thyroid gland preparations with considerable success; also the ovarian glands. The suprarenal gland is less satisfactory, probably owing to the destruction of the active principle during digestion. Oftentimes I administer a mixture of these three glands. Pituitary gland I have found to have a limited use in urticaria. Disease of this gland is either so rare or else still escapes unrecognized, so that I do not find many cases in which it seems indicated to substitute for the natural secretion. However, it probably has a power of stimulating secretion by other organs or tissues and therefore its value in non-pituitary cases. Mention should be made here, also, of the use of small doses of iodides in certain dermatoses in children to supply the iodine needs of the thyroid where the diet is insufficient in that element or its compounds.

104 S. Michigan Ave.

TREATMENT AND RESULTS IN FRACTURES*

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The value of any surgical procedure is to be determined by the degree of success attained in the relief of the condition for which it is undertaken.

The procedure to be adopted by the surgeon is left to his judgment, and the selection of the method through this judgment is to be arrived at by his own experience and a rational use of the experience of others, available through clinics and published reports.

So much is being written these days about fractures that one hesitates to propose it in a medical program without an apology, but until the profession arrives at a method of treatment giving uniformly good results in all cases, the treatment of fractures will be an open question. I therefore venture to bring this subject again to your attention, knowing that those whom I address are practitioners like myself, searching for the truth in the fracture question, and having tried many methods of treatment are not satisfied with their results in many cases.

It is not my purpose to bring out any new method nor any arbitrary changes in the methods now in use, but possibly to present some thoughts which will be helpful in making the form of treatment we now use more satisfactory.

There is uppermost in the mind of every one who attempts to treat a fracture, and it has probably come to all of us many times when we have attempted to treat fractures by the closed method, this question:

"Have I secured an approximation of the fragments so that I can expect union within a reasonable healing period with a good functional result, and what shall I say to this patient when he is shown an x-ray picture of his broken bone with its fragments out of place?"

We all know how disappointing the x-ray plate is when it pictures the broken bone in a part which bears every resemblance to normal in length, alignment, and outward appearance, and that the reward for using our best efforts is to see every fracture, which has been displaced, more or less out of place in spite of any amount of external manipulation we may have made.

It is seldom, if ever, that a displaced fracture is completely reduced unless we cut down upon it and remove the interposed tissues and clot.

Fortunately experience has taught us that it is not necessary to have correct replacement of fragments, and that good anatomical and functional results will follow the closed, moderately displaced, fracture, as quickly as the one that is opened, accurately replaced, and fastened in place with some foreign body, and that nature in time smoothes over the points and angles about such fractures. If alignment be good there will eventually be little signs of the fracture left.

We see in the skiagraph many cases of old fractures functioning normally though there is considerable deformity of the bone not evident from without. We also see many old fractures where callus, angles, points, and deformities can be seen and felt without the aid of the x-ray and yet function is proceeding normally.

We have, too, seen many of our fractures we have accurately replaced by the open method remain ununited for a period much longer than it takes the simple fracture to unite if left closed though not quite in place.

Skiagraphs of our fractures operated on showing the open space between the fragments, persisting long after they should have ossified, annoy us often.

It is reassuring to know that, in some of these, there is a callus splint that does not show in the picture, which enables the part to function until after varying periods the ossification is complete.

We are told that too many fractures are operated upon, but no one has yet told us what is the maximum amount of displacement we may have without resorting to the open method, and until this question can be answered quite positively, we must expect to be criticised by those who, whether or not competent to judge, will, nevertheless, pass adverse judgment on our work.

It is much more comforting to know a fracture is completely reduced even if we have to open up to make the reduction, and now that facilities for operating on fractures are so good, and the dangers at a minimum, there is a strong temptation to operate on them all.

For myself, should I sustain a fracture, and having available the services of a good surgeon

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in a modern hospital, I should choose the open method rather than have the fragments very much out of place. I should want the readjustment to be three-fourths perfect as a minimum.

This conclusion is arrived at after an experience of a third of a century in the treatment of fractures in a section of the country where fractures have been common, and where most all the methods of treatment have been tried out.

I am aware that a great majority of those speaking or writing on the treatment of fractures advise against operative treatment, and especially against the use of plates and other non-absorbable material, but I maintain that there are many cases which require the Lane plate, or the Parham and Martin band or some other strong support should be applied to the fragments.

I am willing to admit that the indiscriminate use of these various aids to reduction and maintenance of position should not be made except where the most rigid asepsis is obtainable and by surgeons of experience in the mechanics of fracture surgery.

Attempts to popularize any new procedure always calls forth enthusiastic and often misdirected effort to make use of it, with failure to obtain the results of its originator, and disappointment is followed by discredit for the procedure.

Few men can follow successfully the leadership of others.

Few surgeons are equally successful with its originator, in the use of any new method.

Many promising surgical procedures, successful in the hands of their inventors, fail when tried out by strange hands.

No two men will get exactly similar results with the same method, whether they be physicians or surgeons, just as one who has made success in practice in one community will not be equally successful in a new location until he adapts himself, for communities differ as well as men.

This human element must be taken into account when passing judgment on the value of any form of treatment.

While we aim at anatomic perfection in the treatment of fractures, abundant evidence is before us, that good functional results may be expected even if there be considerable separation of the fragments. Those of us who may have been compelled to complete the dressing of a fracture which did not look first rate in the skiagraph, may take encouragement from the many cases which come before our observation where the results are entirely satisfactory, if we can only have the cooperation of the patient, which is not always easy and is often the greatest difficulty in restoring the function of a part.

We know that comminuted fractures make the poorest showing under the x-ray and that correct replacement of these fragments is well nigh impossible due to several factors, the principal one being the attachment of muscles pulling in many directions so that if the fragments are brought into position, they cannot be held there without some artificial means directly applied.

Callus and bone formation seem especially active in these cases, and if not operated on they do surprisingly well if held with the ordinary external splints.

We find an increasing readiness on the part of surgeons to display their comminuted fractures with fragments badly out of position, and call a reduction satisfactory, which, to a layman, would seem a very poor job. Results previously obtained in such cases give assurance to the surgeon which he did not possess in the early days of the x-ray.

The beautiful exhibits of x-ray pictures of fractures, plated or treated by other means which we formerly saw on the screen, did not tell all the story. The poor jobs were not shown. We show them all now without hesitation for we have learned that those cases that look bad are not really so, and that nature, if properly guided and assisted, will do wonders in restoring a broken bone, which, under the x-ray looks almost hopeless.

Of the cases which will be presently shown on the screen, I desire to call especial attention to two, illustrating a method of bridging a gap where there has been loss of bone,—one case in which the entire elbow joint had been carried away by a charge from a shot gun. A long Lane plate, bent to an angle and fastened to the humerus and ulna, was a most satisfactory means of holding the arm until healing had taken place, making it possible to handle and dress the arm, which could not have been done in any other way. Ligamentous union followed, giving a joint that is almost as useful as a normal joint.

The other case is a little boy who had a charge of small shot pass through his upper arm at

short range, carrying away about two inches of the humerus, but leaving some fragments of the bone in the wound still attached to periostenum. A Lane plate bridges this gap, enabling the arm to be handled with ease and comfort to the patient while the fragments form nuclei for the rebuilding of the bone. This is a recent case and now under treatment, and I expect a regeneration of bone that will give a useful arm, and a bone inlay can be inserted at the proper time if it seems necessary.

This, to my mind, is the most successful use to which we have put the Lane plate, indispensable as it seems to be at times in holding broken bones in position.

The other fractures shown are chiefly of the long bones, representing the different types of simple, compound, and comminuted fractures in varying degrees of reduction with the means of retention from the external splint to the bone inlay, including the Lane plate and the Parham and Martin steel band. Experience proves that all these methods have their place and serve a purpose of distinct value.

The results in many of these cases prove what has been said in the foregoing paper, for they are old enough to enable one to judge of the value of the treatment. In all these cases good functional result has followed though the period of disability has been unusually long in some of them, due to delayed union, caused by a mild infection in the open fractures and other causes.

It will be observed in some fractures of the thigh that the plate has held the fragments apart after the preliminary softening process has taken place, so that when even slight weight has been put on the leg the plate has either bent, broken, or the screws pulled out. For this reason, the plate in a thigh bone should be removed in about four weeks. The fractured ends will be drawn together by the muscles, and being held in alignment by a splint union is much better favored.

In one case a plated fracture of the humerus shows the plate in situ four years after being put on. It is buried in callus.

In another the plate is still on a femur after eight years. It is the second plate on this fracture. The first one was bent and torn loose as before mentioned. It has not made any trouble, and at the patient's request, has been permitted to remain.

The bone band shown on several of the fractures, especially oblique and spiral fractures, are always removed in about four weeks. Otherwise by their annular pressure they are apt to interfere with the nutrition of the bone and set up a mild periostitis.

End results prove to us that the fragments of a comminuted fracture, though badly placed and impossible to replace without opening the fracture, had better be left alone after we have made as good a reduction as possible.

THE EFFECT OF X-RAYS AND RADIUM RAYS IN MALIGNANCY*

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Both x-ray and radium rays have the power to exert definite chemical, biochemical and biological effects. In order to explain their action in malignancy it is necessary to know more concerning these effects.

It is well known that x-rays and radium rays are able to effect alterations in many substances and compounds. This chemical action is one of oxidation and is brought about by ionization. An example of this is seen in the reduction of silver bromide to metallic silver, which occurs when radiation strikes a photographic plate or film; when radium is dissolved in a weak solution of hydrochloric acid and results in the liberation of free hydrogen and chlorine, etc.

X-rays and radium rays are also capable of modifying the production and actions of enzymes and ferments (pepsin, trypsin, etc.). This is seen clinically when large doses of radiation is applied over the parotid resulting in marked dryness of the mouth. Small doses accelerate and large doses inhibit. Solutions of starch are changed to dextrin and soluble starch.

Protozoa and organisms of this type are very resistant to radiation. The effects on bacteria are negative except for the beta rays. These rays will kill bacteria in culture if massive doses are given. The action is on the organisms and not on the media. The fact that the result is obtained by beta rays of very little penetrating power and the lethal dose is a large one suggests

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that the effect of radiation on bacteria is of no value in the treatment of disease.

Biologically the rays exert a profound influence on all developing forms of life. Broadly, a cell undergoing division or about to do so is very easily modified. (Law of Bergonia and Tribondeau: Immature cells and cells in an active state of division are more sensitive to the x-rays than are cells which have already acquired their fixed adult, morphological or physiological characteristics.) During the rest state a comparatively large dose is required. Small doses accelerate rate of subsequent division while large doses retard or inhibit. Microscopically a marked disturbance is found in the nucleus, especially the chromatin. By modifying the ovum in the very early stages of development by radiation, subsequent faulty development as a whole may develop. The result may be a monstrosity or underdevelopment or over-development of a part. Intense radiation of pregnant small animals will retard growth of the fetus and usually result in birth of a dead fetus. Mature small animals are easily killed with large doses.

In plant life the effect is similar to the animal kingdom. Small doses will cause beans to grow more rapidly if applied early. Crown gall, a growth in plants, analogous in many ways to human cancer can be prevented by suitable exposure to x-rays.

The chief facts given above may be summarized as follows:

1. Minute amounts of radiation stimulate while large amounts inhibit and destroy.

2. Cells that are undifferentiated, immature, biologically or physiologically active, are most readily influenced.

3. Bacteria are not directly affected by gamma rays or x-rays. They may be killed by large amounts of beta rays.

THE ACTION IN MALIGNANT TISSUE

Histologically every malignant tumor consists of three parts: 1, a vascular supply from which it receives its nutrition; 2, a supporting stroma of connective tissue which serves to convey the vascular structures and forms a framework for the malignant cells; 3, the malignant cells which are arranged according to the type of growth present. X-rays or radium rays have a marked action on all parts of a malignant tumor and this action is as follows:

1. There is produced at first a dilatation of the vessels. The endothelial lining is swollen and the perivascular lymph spaces become infiltrated. This swelling is due to an intercellular and intracellular edema. This edema becomes pronounced so that the arterioles and small lymphatics become occluded by it, thus shutting off the nutrition to the growth. When the treatment is carried far enough this edema results in an endarteritis obliterans in the small vessels. The lumen of the blood vessels becomes smaller so that they appear like capillaries lying in the midst of fibrous tissue. Long continued radiation always diminishes the vascularity to the part treated. The proof of this assertion is seen in the excellent results obtained by radiation treatment in angiomata.

2. The action of radiation on the connective tissue cells of the malignant tumor is very important. Very early an extensive proliferation of the connective tissue cells sets in. These cells permeate the tumor everywhere, encircle malignant groups of cells and press them together strangling them. The connective tissue actively combats the malignant cell, and if successful the tumor mass becomes largely replaced by fibrous tissue. We must assume that the radiation which causes disintegration of the malignant cells has a stimulating effect on the connective tissue cells.

3. The effect of radiation on the malignant cells is interesting. There is an enormous difference in the susceptibility of the various new growths to radiation. Basal cell epitheliomata are very susceptible as also is keloid. Squamous cell epitheliomata are much less susceptible. Benign endotheliomata (moles) are cured with difficulty. Giant cell sarcoma is very susceptible, more so than either the spindle-cell or round-cell sarcoma. The difference in susceptibility seems to be partly one of cytology and morphology. In a mole the cells are mature, differentiated and not undergoing rapid division. In basal celled epitheliomata, the cells are constantly undergoing rapid division and are immature and unspecialized. Such types are always easily influenced by radiation. In a squamous cell cancer while the cells are undergoing rapid division they are less embryonic in type and presumably for this reason more resistant. It is the concensus of opinion that the effect of radiation on the malignant cell is due to inhibition of cell division.

As a general proposition, the malignant cell is more "radiosensitive" than the surrounding tissue. This peculiar sensitiveness forms the foundation of the radiation treatment of malignancy. One reason for the failure of large doses to completely destroy all cells in a favorably located susceptible malignant growth at one time, is the fact well known to cytologists, that cells are relatively immune during their resting stage. As the result of radiation there is probably some kind of an intra-cellular and intranuclear chemical change in the malignant cells. The exact nature is still unknown. We know the nucleus of the cell is injured and this is attended by either the loss or arrest of the power of mitosis; the malignant cells are killed by the action of the rays and replaced by fibrous tissue and in some instances an evolutionary process occurs and some malignant cells appear to become converted into cells indistinguishable from normal connective tissue.

The histologic changes of irradiated malignant tumors is very definite and characteristic. Ewing states, "the series of morphologic changes which take place after successful radium application is specific and that when these changes are present in undisturbed course, it is possible to recognize tumor tissue treated by radium." There is evidence to indicate that the same observation holds for x-rays.

THE METHOD OF USE IN MALIGNANCY

With the exception of most cutaneous malignancies and most new growths located superficially in readily accessible mucous membranes including carcinoma of the uterine cervix, the treatment of choice is surgical. Since carcinoma begins as a local disease it can be successfully eradicated by surgical means, providing we can get the patient early enough and enucliate the growth before it has begun to spread. Unfortunately many malignant conditions are not seen early enough. If to the complete, radical surgical operation was added preoperative and thorough post-operative radiation, a great step in advance in the battle against malignancy would be made. Too few surgeons as yet fully appreciate the value of pre-operative radiation.

The great value of pre-operative radiation is in the fact that radiation causes a marked effect on the walls of the lymphatics and in that way tends to block the main channels of dissemination through atrophy. Of course the rays also have a favorable action on the malignant cells themselves. This pre-operative radiation makes microscopic changes in the tissue and is given with the object of so devitalizing the malignant cells that they can not easily reproduce themselves either locally in the wound or when transplanted by the lymph or blood channels to other locations in the body during the operation. As a general rule this preliminary radiation should be followed, within a few days to two weeks (preferably the latter time) by a radical and complete operation, which should be done just as thoroughly as if no preliminary radiation had been given. Some surgeons hesitate at this slight delay in their surgical treatment but this is without good reason. Pre-operative radiation offers still more; by taking advantage of it some inoperable cases are rendered operable.

In about two weeks after operation, post-operative radiation should begin. The efficacy of this is well established. The radiation will tend to further block the lymphatics and kill any malignant cells that may have been left in the surgical field. Due to the fact that some of the malignant cells may be in a resting state and therefore relatively immune to radiation, several series of post-operative radiation are given at intervals of a month or more

Many of our leading surgeons are firm believers in the value of post-operative radiation. This treatment is faithfully carried out at the Mayo Clinic in many cases. Boggs states that recurrences may be prevented in 25 to 50 per cent. of the cases by proper post-operative radiation. No less of a surgeon than John B. Deaver, who has been reported as quite pessimistic as to the value of radium in the treatment of carcinoma, states that the prognosis of carcinoma of the breast is 25 per cent. better when post-operative radiation (x-ray) is used.

CONCLUSION

The proper treatment of deep seated malignancies consists in first a thorough course of radiation to the tumor mass and its draining lymphatics. This to be followed within a few days by a complete and radical surgical operation. Several courses of thorough post-operative radiation should follow the operation.

Since small doses of radiation act as a stimulant to cell proliferation, we can easily see the

absolute necessity for administering large doses in malignancy. However, the dose cannot be too large or it may defeat its own purpose by causing extensive injury to the normal tissues. It is this judgment of being able to administer the exact dosage and not too little to cause stimulation of the tumor or too much to destroy normal tissue, that makes radiation therapy in malignancy a science which should be in the hands of a specialist.

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SYMPTOMS AND TREATMENT OF DEVIATIONS OF THE NASAL SEPTUM*

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The nasal septum is made up of the vomer, the triangular cartilage and the perpendicular plate of the ethmoid. It constitutes the thin partition between the nares which lies very close to the turbinates and the cells of the ethmoid on either side. The space between the septum and the structures of the outer wall of the nose is sometimes quite narrow, and any deviation of a portion of the septum brings about contact between the septum and the outer wall. This results in more or less irritation of the sensory nerves on both sides of the nares and produces a secretion of mucous from the mucous surfaces—it may also produce painful or tickling irritation of the sensory nerves resulting in pain (neuralgia), or sneezing with profuse sero-mucous discharge.

If the contact between the two walls is at a point near an opening of one of the various nasal sinuses the irritation to the mucous tissue around the ostium may swell to the degree that it closes the ostium and the secretion in the sinus so blocked will undergo putrefactive decomposition within a short time, twenty-four hours being long enough to effect a profound change in the character of the secretion so retained and this is the inception of sinus infections. Or the deviation may cause direct closure of the ostium and mechanically obstruct the proper drainage of the sinus resulting in the same pathologic changes and sequelae. If the sinus thus blocked continues to secrete and pyogenic infection take place the result is purulent sinusitis with the symptoms of absorption of toxins and the pressure in the sinus results in the excruciating neuralgia of tension.

On the other hand the sensory nerves of the septum itself take up the painful reflex and both walls of the nose suffer painful experience which may be not only local but may radiate to other parts of the head, as, for instance, the eyes, temporal regions, occipital regions, teeth, cheeks and top of the head.

The causes of deviations of the nasal septum are numerous, the various forms of athletics, baseball, football, boxing, wrestling, falling and striking an object with the nose, walking against the edge of a door or other object in the dark, and many less painful blows that nearly every child experiences while growing up through infancy and childhood. The painful symptoms of any such blow on the nose are soon forgotten due to the fact that the nose has no muscular tissue attached to the septum. The temporary inconvenience is not so readily repaired by nature. The septum being thin and subject to so many sudden contacts is easily and frequently fractured, and, judging from the points of deviation, the fractures take place in any and all portions of the septum, the most noticeable being that of the triangular cartilage and next being the junction between the triangular cartilage and the vomer and the perpendicular plate of the ethmoid at its anterior end.

Nature repairs by the formation of a callous at the line of fracture of the nasal septum just as she does in the callous formed in fracture of the long bones of the body, and as thoroughly oversupplies the injured area with repair material so that in many instances the callous is the anatomical structure which produces the pressure between the walls of the nose. In other instances the actual deflection has taken place either suddenly or slowly as the result of the repair and the structure of the septum is in pathologic contact with the outer wall of the nose. These deviations are often overlooked by very good men because of their unusual location or for the less excusable reason that they have

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not shrunken the tissues of the nose and made a careful examination of all possible points of contact.

Aside from the merely painful symptoms and the infections of sinuses and cells of the nose arising from deviations of the nasal septum, there is a large class of sufferers from nervousness and closure of the nasal passages to respired air and of chronic or recurrent discharge due to irritation of contact. This class of cases grow very nervous and become chronically ill at ease and display this nervousness by irritation at minor perplexities and problems of every day life. They are the valetudinarians and the neurotics and neurasthenics, the etiology of whose cases the best informed internists can assign to no cause.

These cases of pressure between the walls of the nose are frequently given anodynes and sedatives and hypnotics and possibly opiates to ease them but with no amelioration of their symptoms. Glasses are fitted or misfitted and the cases frequently despair of ever being well.

The operations of a generation ago attempted to refracture the septum and hold it in proper position by splinting the septum till it might remain in the median line of the nose. This was not at all satisfactory in the bony portions of the septum due to the new formations of callous and was positively a failure when applied to the cartilaginous portion of the septum.

The first successful operation was the submucous resection of the septum. This was used first in the most pronounced character of deviation such as blocked the nares or one side of the nose, and with light added from improvements in instruments and technique we are now able to remove almost any portion of a deviated septum and leave the rest of it "in statu quo ante," as our legal friends say.

The larger deviations of the most patent portions of the septum are readily recognized but the posterior spurs and the extremely anterior portions high up in the nose are not so easily seen and are not so easily corrected. I might cite you to numerous cases of ethmoiditis that have been relieved by making a careful examination of the portion of the septum embraced in the perpendicular plate of the ethmoid which had previously closed the ostia of the ethmoids in either an anterior or a posterior region and the remainder of the septum was left intact because it was not offending.

The profession might do well to have their cases of recurrent nasal "colds" and "catarrh" critically examined for deviations of the septum and when found insist that the offending tissue be removed. These cases are sometimes mistaken for atrophic rhinitis, but the resemblance is too remote for confusion if the rhinologist is worthy of confidence. We have some men posing as rhinologists or at least passing an opinion on nasal cases who do not know a turbinate from a polyp and the unfortunate who fall into their commercial clutches are pitiable indeed. I have knowledge of one case which went sixteen years with a deviation of the extreme anterior end of the perpendicular plate of the ethmoid effecting a closure between the septum and outer wall and also the frontal sinus and relief was experienced only after opening the frontal duct and doing a submucous resection of the offending portion of his nasal septum. Another instance is that of a case which suffered thirty years with recurrent purulent infection of the anterior ethmoidal cells due to a deviated septum in the same region, and for twenty years good men looked for the cause of the trouble and one cut away a portion of an inferior turbinate, another cut away the anterior end of the middle turbinate, a third cut away the remainder of the middle turbinate, a fourth exenterated the posterior ethmoid cells, and a fifth and sixth made a diagnosis of atrophic rhinitis and stated that to remove any more of the nose on that side would lead to dryness more grievous than the purulent discharge. All the while the anterior end of the perpendicular plate of the ethmoid was blocking a cell of the ethmoids and the patient was no better for all this surgery. A careful examination of the origin of the purulent secretion and a comparison of the two sides of the nose would have revealed the deviation to the one side and a partial submucous resection of the septum would have relieved all the distress without the hazard of so many operations.

I should have mentioned that three doctors of dental surgery took a hand in extracting the teeth near the maxillary sinus and drained and irrigated that cavity, but with no success whatever.

In this paper I am not seeking to place the nasal septum in any undue prominence as a factor in disease. I am endeavoring to offer a

suggestion that this part of the human anatomy be given more consideration in etiology of conditions briefly stated above.

NEOPLASMS OF THE LARYNX

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BENIGN OR NON-MALIGNANT TUMORS

Under this subject are included all innocent growths which are found in the larynx at any age.

The only lesions excluded in tumor form are the localized manifestations of general or local diseases such as tuberculosis, syphilis or the various general blood disorders, such as disease of the kidneys, exenthemata sequellae, especially of scarlet fever, measles and erysipelas, all of which do not produce true growths, but pile up excrescences of mucous membrane.

The larynx is not so frequently affected by neoplastic growths as the pharynx, and much less than other parts of the body.

Thus we find in the public clinics, statistics which recite tumors of the larynx as comparatively rare in comparison with tumors of the stomach, intestine, uterus and mammary gland.

Historically,* it was not until 1850 that a complete monograph appeared, published by Ehrmann, in which he reported 31 cases of laryngeal growths.

In 1851, Robitansky published 10 cases.

In 1852, Green of New York gave the histories of 39 cases, 2 of which had occurred in his own practice.

In 1853 Buck collected 49 cases, including 1 of his own.

In 1854 Middledorpf published 64 cases.

In 1859 Pratt published the first account of a laryngotomy by removing a laryngeal growth through an incision in the tyro-hyoid membrane.

Of all these cases reported, in only 9 was an attempt made to remove the growth during life.

In 1855 Garcia invented the laryngoscope, which made it possible to view the interior of the larynx and this was greeted by a wave of enthusiasm which produced the effect of having cases of laryngeal growths reported by Czermak, Lewin, Gibb, Fauvel and Walker.

In 1865 Von Burns published a monograph containing 17 cases and in 1868 an additional 23 cases.

*McKenzie: Diseases of Nose and Throat.

In 1866 Elsberg gave a report of 13 cases.

In 1871 Mackenzie published a report of 100 cases operated upon by him from 1862-70, and the medical literature on 189 cases reported by others, being a complete list of all cases operated upon or reported up to that time.

Subsequently he added 123 cases of his own which were operated upon between '70-78.

In 1872 Stoerk published 36 cases operated upon from '71-72.

In 1874 Tobold reported 206 cases with 70 operations between '61-74.

In the same year Schnitzler recorded 35 cases from '72-74.

In 1875 Oertel reported 68 cases, 59 of which were operated upon between '62-74.

In 1874 Van Schroetter related 84 cases, 48 of whom were operated upon between '70-73.

In 1876 Hopmann reported 25 cases with 18 operations from '70-75.

Fauvel in this year published 300 cases with 220 operations from '62-75.

Boecker published 40 cases operated upon between '74-76.

It was not until 1878 that the relative merits of endo-laryngology was compared to laryngeal fissures as published by Paul Bruns.

Since this period the literature has been enlarged until at present, operations in this region have become quite numeorus.

Etiology. Much has been written as to the probable causes of laryngeal growths and opinions of great variety have from time to time been advanced.

It is fairly well agreed that these forms of pathology are prone to occur as a result of an inflammatory condition of the mucous membrane of the larynx which has been prolonged in its course.

If this is not an actual cause it is at least the general belief that it acts as predisposing cause.

It is also accepted that tuberculosis and syphilis or other constitutional dyscrasae do not cause growths in the larynx, although excrescences or false inflammatory outgrowths may occur in the course of these diseases. The one great exception to this being breaking down of a cicatrix of specific character into a malignant type of growth as seen in syphilis of tertiary stage. This is borne out by the condition of the larynx when growths are found.

The growth usually fails to excite an inflam-

matory process in the tissue contagious to the growth.

The abuse of the voice by overtaxation or unusual strain or improper method of phonation seem to be recognized by authorities as a prominent feature in the cause of the affection.

Thus singers, actors, public speakers, auctioneers, paper venders and huxters are among the greatest number affected.

In most of the cases the subjects are in the middle period of life, from the 25th to the 55th year.

We do find occasional laryngeal growths in the young and congenital cases have been reported, but these cases are comparatively rare.

Growths occur more often in the male than in the female in the proportion of two to one.

In the very young the growth has been almost without exception of papillomatous character.

Deaths have occurred in such cases from suffocation by the magnitude of the growth, or by the growths being pedunculated and having dropped into the larynx, causing a closure of the laryngeal aperture.

In adult life, aside from the inordinate use of the voice and the presence of chronic hyperemia, we might expect forms of irritation prone to favor growths.

Thus smoking, working in chemical fumes, dust-laden air, chronic alcoholism and constipation may be exciting causes of hyperemic laryngitis and this in turn favor the formation of growths in the lining membrane of the larynx.

Symptoms. One can easily understand that the symptoms of a laryngeal growth will depend upon the location of the neoplasm, its size and the nature of the growth.

If the growth occur on or near the edge of the cords, we will expect to have marked aphonia and dyspnea as an early sign, depending on the location, size and character of the morbid process.

Hoarseness would occur early were the growth so situated as to interfere with the coaptation of the edges of the cords, while if the growth were sesile or pedunculated, it might attain a considerable size with practically little aphonia or dyspnoea, as it might be displaced in the laryngeal function.

Pain is usually very insignificant and hoarseness may be the only subjective symptom of a growth in this region.

Usually there is alteration of the voice, although it may not be permanent if the growth does not produce difficulty in bringing the cords into the phonating position. Cough is often present and is of a croupy character.

If the growth is diffuse in character there is often a rattling respiration.

As the growths are usually above the true cords, inspiration is difficult, while expiration occurs with little or no embarrassment.

If the growth is sub-glottic, as is occasionally seen, inspiration is easy while expiration is attended with difficulty.

Impairment of the voice will be found in about half of the cases.

Growths of the epiglottis and ary-epiglottic folds do not usually affect the voice unless by their magnitude they extend into the true laryngeal passage.

Small growths are ofttimes more productive of aphonia than larger pedunculated ones, on account of being more fixed in their position and thereby interfering more with the function of the cords.

Difficulty of swallowing or dysphagia occurs in a limited number of early cases, but not unless the growth has attained considerable size and usually when the lesion is situated or springs from the epiglottis or arytenoid cartilages.

Objective signs can be seen easily with the laryngoscope and the exact character and position of the growth ascertained.

CLASSIFICATION OF NON-MALIGNANT TUMORS OF THE LARYNX

The different types of innocent growths are:

a, Papilloma,
b, Fibroma,
c, Myxoma,
d, Cystoma,
e, Angioma,
f, Lipoma,
g, Chondroma.

a, *Papilloma* usually occurs as a sesile growth, although it may appear as a pedunculated mass. It arises from the mucous membrane of the larynx but does not affect the deeper layers of the mucosa.

The surface membrane is hyperplastic and the growth varies from the size of a grain of wheat to that of a growth which fills the entire larynx.

It is observed at times as a diffuse mass which affects the deeper tissues without much hyperplasia of the surface layer.

It affects a localized spot or may occur in areas of varying size throughout the larynx.

In recurring papilloma it is usually of the latter type and its removal becomes more difficult.

Recurrence is frequent in this type of growth.

Laryngeal growths in children are to a great degree of this type and we often find the larynx affected over a considerable portion of its surface both above and below the cords.

When recurrence occurs it is usually prompt and often the skill of the laryngologist is put to an extreme test to cope with this condition.

Papillomas often disappear spontaneously, especially if rest of the larynx by tracheotomy, or otherwise, can be effected over a period.

Deaths have occurred from suffocation and often tracheotomy must be resorted to as a measure to prevent suffocation.

b, *Myxoma.* Myxomas are rare. They are formed by loose branching connective tissue bands and myxomatous cells.

They are usually located upon the cords and are formed from a degeneration of the muccous membrane of the cord.

They are smooth, gelatinous masses which may become lobulated, quite translucent and of a pink color.

c. *Cystoma.* Cystomas usually occur in the adult.

The usual site is upon the epiglottis or ventricular bands.

They are often pedunculated, pale red in color, smooth of surface and easily ruptured upon attempt at removal.

These tumors are rare and are usually surrounded by a hyperemic area on the mucous membrane.

d, *Fibroma.* Fibroma occurs next to papilloma in frequency and is always found in the adult. Mackenzie saw it in a patient 27 years of age as the youngest and at 57 in the oldest patient.

It is similar to fibroma in other parts of the body being composed of interlacing fibers of connective tissue containing a limited number of branching cells.

It is non vascular and covered by mucous membrane which is usually hyperemic beyond the extent of the growth, forming an areola.

It is usually sesile in form and is most frequently situated upon one of the vocal cords.

It is usually small, round and smooth, unless the growth is composed of lobules.

e, *Angioma.* Angiomas as the name would indicate are vascular growths with branching connective tissue.

They occur unilaterally and in the adult.

They are situated usually on the ventricular bands, epiglottis, hyoid fossa or lingual fossa.

Often they appear near a varix.

One or two cases have been observed where the growth was situated upon the cord.

They are quite rare, have a raspberry appearance and of course are very liable to bleed, especially upon an attempt at removal unless amputated by means of a hot wire snare. In using the hot wire snare care should be taken to have an orange heat, as a white heat will allow of a great amount of hemorrhage.

f, *Lipoma.* Lipoma of the larynx is exceedingly rare and usually occurs in the soft tissues. It is a round or round flattened tumor with a smooth surface and yellowish in color. It gives a soft sense on pressure which is a diagnostic point between it and fibroma.

It is usually encapsulated and can therefore be removed easily.

The author has had but one case of lipoma of the larynx which occurred in a man 71 years of age, which was accompanied by some 40 similar typed tumors on other portions of the body.

The laryngeal tumor was situated upon the right ventricular band and attained the size of a large English walnut.

Removal was effected and relief was correspondingly prompt.

g, *Chondroma.* Chondroma is a cartilaginous growth originating from one of the laryngeal cartilages.

It is firm in texture, immovable and may attain a considerable size encroaching upon the breathing space and causing dyspnoea.

The cricoid cartilage is the most frequent site of development, although it has been observed arising from the epiglottis and the thyroid cartilage.

It is irregular in outline, sometimes eroded and covered by an irritated hyperemic mucous membrane.

The growth is slow, and it occurs in the adult only.

At times osseous tissue is found in these tumors.

They vary in size from a small French pea to a size which occludes the larynx.

They are whitish in color and hard in consistance.

Diagnosis. There are many conditions where a mistake may be made where a growth might be suspected but which condition arises from syphilitic exhibitions.

Syphilitic ulceration may result in excrescences which are irregular projections at any point in the larynx.

Gumma is not usually mistaken for a growth from the fact that it appears as a deposit in the tissues of the larynx particularly around the arytenoid space.

Laryngeal thickenings from tuberculosis have no true character of tumor and are followed by ulceration.

Syphilitic chondyloma is an irregular prominence whitish in color and very little like a tumor as it is raised very little above the surface of the mucous membrane.

Prolapse of the ventricle may have the appearance of a tumor but it is very rare and its true character is not difficult to determine.

The most difficult diagnosis is in regard to the benign or malignant character of the growth and experience alone is the best guide in this determination.

Prognosis. Suffocation is the one thing to be feared in this type of cases as far as death of the patient is concerned.

If the tumor mass attains a considerable magnitude there may be partial or complete inability to swallow unless relief is afforded by removal of the growth.

The prognosis should be considered *first, in relation to life* and *second, in relation to voice.*

In the relation to life tracheotomy is our safeguard where the growth produces dyspnoea with or without surgical treatment of the growth.

In relation to the voice a favorable prognosis can usually be given if the operation has the advantage of having been performed by a skilled operator and the growth does not recur.

If the patient must be subjected to several operations or the growth is too much incorporated in the adjacent tissues, the prospect of a perfect vocal function is very doubtful.

Recurrence is frequent in diffuse papilloma and this must not be forgotten in giving our prognosis.

Treatment. There are certain questions which arise in connection with the treatment of benign growths of the larynx.

First. Is there enough inflammation following an operation for the removal of neoplasms in the larynx to necessitate a tracheotomy later?

Second. Does the operative manipulation cause a necrosis of tissues as a result of the operation?

Third. Does the operative treatment cause sufficient irritation of the tissues to change their character from benign to a malignant type of growth?

Owing to the fact that laryngeal tumors are rather infrequent in the practice of the average specialist and the difficulty of getting a satisfactory operative view of the larynx, the tissues are often injured in operations for the removal of growths.

Cases have been reported in which inflammatory swelling of the endo-laryngeal tissues have occurred that required a prompt tracheotomy.

This may have been from lack of technique on the part of the operator which in turn is due to the fact that the old method of indirect laryngoscopy is difficult and his experience is of such limited character as to make the operation difficult of performance.

This is of less frequent occurrence at the present time owing to the adoption of the method of direct laryngoscopy but this method is in the hands of comparatively few operating laryngologists.

Second, operations do not cause much necrosis of tissues even where the operative technique were poor save in isolated cases.

Cases reported were caused by instrumental trauma.

Third, conversion of benign tumors into malignant types is a possible occurrence as we know that persistent irritation of healthy tissues may lead to the formation of hyperplastic growths.

It is probable in the writer's opinion that there is some constitutional condition present in cases which take upon themselves a type of malignancy.

We recall papillomatous growth recurrent in type which have been operated upon numerous times with no alteration in the character of the growth.

It may be true that cases which were supposed to degenerate into malignant type, were malignant from the first and the diagnosis of non-

malignant was a mistaken observation.

Treatment is either palliative or radical.

Paliative treatment consists in placing the patient in such condition as to relieve him from immediate danger of life.

This type of treatment is required in cases in which the growth greatly interferes with respiration in such cases where the patient will not consider an extra-laryngeal operation.

This treatment consists of tracheotomy and we can assure the patient that he is protected as regards death from suffocation.

If the growth is large the patient may escape dyspnoea by the tracheotomy, but is liable to dysphagia, which may be progressive, by reason of the increasing mass of the tumor which although not so immediate in its danger to life, yet is fatal in the end, unless relief is obtained by a reduction or removal of the tumor mass.

Radical treatment may be either intra-laryngeal or extra-laryngeal.

Endo-laryngoscopy is perhaps the most refined surgery upon the body and when successful leaves the natural passages totally normal.

When possible this of course is to be chosen over the external operation. Now that direct laryngoscopy has come to be perfected to such an extent, it offers a very satisfactory solution for the removal of most laryngeal growths, as it is possible to search every part of the larynx and growths which extend below the true larynx are easily accessible by its use.

Indirect laryngoscopy, however, will continue in use by the great majority of laryngologists, as a method in discrete growths, where patients refuse the more formidable procedure of the direct method, or where the operator is unfamiliar with the methods of direct laryngoscopy.

Extra-laryngoscopy is indicated in cases of tumors of large size, density of tissue and in inaccessible situations or extrinsic character, where there is great inflammatory tumification, in spasm of the glottis, exaggerated laryngeal reflexes, a small deep mouth or in young intractible children where it is not desired to risk anesthesia with the intra-laryngeal operation. In growths affecting the greater part of the cord or of both cords, where the growth extends below the true cords or a tumor within the ventricle.

It is generally admitted today that the extra-laryngeal operations are indicated only in severe cases as all small growths can be easily removed by the intra-laryngeal method. There are dangers in the extra-laryngeal operations both as to life and to voice.

Cases have developed pneumonia or lung abscess: others have died from hemorrhage or edema about the wound, while if the cartilage be injured the patient may develop a chronic perichondritis.

As to the voice, authorities disagree, but it is true that about 50 per cent of operative cases retain a normal voice, while about 18 per cent record a total loss of vocal function and the rest or 32 per cent are more or less hoarse afterward.

It is thus shown that in 50 per cent of cases the voice is either partially or completely lost.

These results by the extra-laryngeal method are not so bad however as we might think when we consider the type of case in which the operation is performed and if the same were operated upon by the endo-laryngeal method the function of the larynx would probably show fully as poor results.

DOUBTFUL TUMORS OF THE LARYNX

Papilloma, fibroma and myxoma sometimes degenerate into fibro-papilloma, and fibro-myxoma which are considered borderline types of malignancy and are therefore considered as dangerous and treated accordingly.

MALIGNANT TUMORS OF THE LARYNX

Carcinoma and sarcoma form the types of this class and until a few years ago were both considered cancer.

They are morbid growths which ultimately cause the death of the host either by apnoea, hemorrhage from erosion of important vessels in the neck or from cancer cachexia or metastases.

Sarcoma is not so frequent as carcinoma but is more rapid in its development.

It grows as an embryonic cell mass and is more discreet than cancer.

It is very malignant, usually causing death of the patient in a few weeks or months.

It is at times encapsulated as a lympho-sarcoma and when this form of tumor exists the growth can be removed with rather favorable prognosis.

Cancer is more indurated taking in the tissues surrounding and changing the entire larynx into a degenerated epithelial mass.

Etiology. The cause of malignant tumors of the larynx as of this type of tumors in other portions of the body, is as yet undiscovered.

It occurs usually in the middle or advanced periods of life.

It is found in man three or four times more frequently than in women.

It is found in smokers and chronic alcoholics more than in abstainers.

More in patients with intestinal torpor than in those whose elimination is better.

It is a disease in which there is some blood change in its chemic findings.

Some observers tell us the etiology of malignancy lies in the fact of a loss of the potash content of the blood and tissues which loss is substituted by an excess of sodium chloride in the body.

This is a subject upon which a vast amount of investigation has been made and as yet very little or no definite results have obtained.

It is true that in certain cases potash in one form or another has an inhibitory if not an antagonistic effect on the progress of sueh growths which this is said by other observers as evidence of a mistaken diagnosis confusing this disease with some form of syphilitie manifestation.

There can be no doubt but that it is a change in the chemic constituency of the blood and that the disease is a comparatively slow process causing by its growth an anaemia of the general body which we know as cancer anaemia, until the vitality of the host is exhausted and death ensues.

Cachexia in laryngeal cancer does not occur as soon as in cancer of other portions of the body probably due to the fact that the voice box is not so intimately connected with the glandular system as some other parts of the body.

Symptoms. The first sign usually to attract attention is a hoarseness which is more or less marked according to the site of the beginning growth.

Pain of a lancinating character or at times a burning sensation radiating to the ear of the same side is an early and almost constant sign.

The pain is at first confined to the larynx itself.

After a time there may be pain in the submaxillary and cervical glands, the orbit and the forehead.

Phonation soon becomes difficult but by an effort the patient can still produce a sound.

If ulceration occurs there is a foetid breath which should be regarded as a suspicious sign.

As the tumor increases in size dyspnoea occurs, the glands of the neck become involved and later the larynx becomes swollen, enlarged and hard.

Deglutition may become difficult or impossible as the oesophagus becomes affected. Hemorrhage may or may not occur.

Metastases usually do not occur at least not until the advanced stage of the disease, and death occurs most often by reason of the larygeal growth itself.

Objective examination of the interior of the larynx will show an undefined swelling without many distinguishing features if seen early but after a short time the true character of the growth will be recognized.

It usually begins upon a ventricular band but may occur on a cord or any other part of the larynx.

As the disease advances the patient becomes anaemic, losing weight rapidly and dies either from exhaustion, suffocation or hemorrhage.

Diagnosis. The diagnosis is doubtful in the early stages but after the tumor is well formed the character of the growth is characteristic.

The appearance of a dirty gay color with bright red spots and an irregular swelling on one of the ventricular bands, in a patient past the middle of life without the history of syphilis or laryngitis, should make us suspicious of a malignancy.

If in doubt a small piece is removed and given to the pathologist for laboratory findings.

There are many observers who consider this proceedure as dangerous in the fear that migratory cells may be liberated into the blood stream and cause metastatic exhibitions elsewhere in the body.

Prognosis. If left to pursue its course the termination of cancer is death.

Owing to the greater resistance of some patients the time limit is not the same, as some live much longer than others. but it is simply a matter of the amount of resistance. the disease getting the best of the host when the anaemia produced becomes greater than the repair of tissue waste.

Scirrous type of cancer does not kill as quickly as the ordinary form of epithelioma and cases have been reported to live during a period of several years while the ordinary course of the disease is about one to two years.

There are records of cases who survived during a period of fifteen years, before the disease destroyed the host.

Treatment. At this time much difference of opinion exists as to the proper care of these cases. Most of the cases if not all fall under the head of operative treatment.

We divide them into six classes according to the pathology present and operate upon them accordingly.

1. If the tumor is beginning, is circumscribed, limited to one-half or less of the larynx, and is superficial, we do a laryngeal fissure, exenterating one-half of the contents of the larynx down to the cartilage.

These cases contraindicate total laryngectomy. Para-syphilitic tumors come under this head the prognosis being good.

2. Cases where one-half of the larynx has a tumor affecting the deep tissues, that is the perichondrium, with extrinsic glands not affected, we attempt to save the healthy side of the larynx by a hemi-laryngectomy.

The advantage in this operation over a complete laryngectomy is that the voice retained is fair and respiration is continued through the natural passage.

3. Cases where only a small tumor growth appears which is shown to be doubtful or malignant in character, affecting the perichondrial layer and where the extrinsic glands are affected or not, a prompt laryngectomy is indicated.

4. Cases where both cords are affected by development of the growth, where there are no external glands affected and where the perichondrium is not affected, laryngeal fissure followed by actual cautery is indicated.

This destroyes the voice function, but keeps the continuity of the larynx for a respiratory function, which is a great advantage over the continuous use of the tracheal tube.

5. Cases where both cords are affected, with the perichondrium affected, with or without extrinsic glands, complete laryngectomy is indicated early.

6. In cases of extrinsic growths, including cartilages, external glands or other tissues, oesophagus, or epiglottis, operation is not indicated.

These patients go on to demise; operation does not cure, seldom relieves and never prolongs life. Here tracheotomy only is indicated as recurrence after operation is inevitable in from three weeks to six months.

The results of surgical treatment of these malignant growths is very poor unless the patient is seen early and operated upon by some such classification as that given above.

It is a great injustice to sacrifice a larynx by too radical an operation if a modified one will do; but it is worse to do too modified an operation if the life of the patient is thereby endangered.

Most laryngeal cases present themselves at too late a period.

This is due, *first,* to the ignorance, superstition or fear of the patient and *second,* to the ignorance or worse of the doctor.

We constantly have patients presenting themselves who have by reason of the fear of laryngeal growths, avoided surgical aid, partially on account of the great fear of malignancy.

This fear is prevalent with the laity, the patient realizing that if the tumor be present it is liable to be malignant and in such case; surgical treatment is of no avail.

The effect of palliative treatment also plays an important part in preventing patients from receiving proper surgical treatment.

I have known physicians to keep such cases under their care until it was too late for operative treatment, because they did not understand the gravity of the case until a time when no benefit could be expected from operative procedure.

Cases are thus treated by the family physician during the space of time in which operative procedure probably would afford permanent relief.

General surgeons who have until recently assumed charge of all such cases have been open to the same censure partly owing to their lack of knowledge of laryngeal conditions, their inexperience in laryngeal examinations and their lack of knowledge of the operative procedure indicated in the particular case presented.

There are objections to destroying the larynx.

First. It produces a bad breathing apparatus, particularly if the operation be laryngectomy, thus sacrificing the continuity of the larynx and producing an undesirable effect, both to the patient himself, from his inability to converse or make his requirements known or to the embarrassment caused to those with whom he wishes to converse.

Second. It has an economic aspect from the fact that his earning ability is reduced to a minimum, allowing him only those vocations which he can carry on without the use of the voice.

This renders him undesirable in nearly every walk of life.

Third. The use of the tracheal tube is unsightly. It is a constant care, requiring frequent cleansing of the tube to keep it and the parts sweet and clean, aside from the unusual susceptibility of the patient by its use to diseases of the respiratory tract situated deeper in the chest.

Surgery of laryngeal growths must be performed at an early stage if we are to expect gratifying results and to attain this end the general practitioner should realize his duty in getting such cases into expert hands at the earliest possible moment.

In this we will be able to cope with malignant disease of the larynx in a more satisfactory way than has heretofore been possible.

Before closing I should like to pay my respects to the different palliative treatments by means of the different forms of heat.

Diathermy has been used with more or less success, although authors vary on the end results; some claiming prompt eradication of growths with happy results, while others seem to be disappointed by its use.

Of the different forms of heat rays it appears to the author the most favorable of those yet used.

X-ray is of advantage in controlling the pain in laryngeal growth, but as a treatment alone it seems to be very disappointing, as cases seem to go on in the usual way despite its use.

Radium has many ardent admirers and I have seen tumors soften for a time under its use; later, however, there seems to be an exaggeration of the spread of the growth and it appeared to me the process was accelerated, rather than retarded and obliterated.

Personally, I am willing to accept any of these modes of treatment if statistics can prove them as deserving.

Intervenous injections of saltpeter or other potash medications may be of service, but up to the present are known only in theory.

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THE INJECTION TREATMENT OF HEMORRHOIDS*

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Since the surgical treatment of hemorrhoids is so eminently successful and satisfactory, one might well ask if there is now any good reason for attempting to cure such by other than surgical methods.

From the standpoint of the physician, surgery is and doubtless will always be the method of choice. But from the standpoint of the patient, surgery is and doubtless will continue to be the method of last resort. Even though the improved technique of local and regional anesthesia has rendered the general anesthetic unnecessary and has to a large degree overcome the postoperative pain and inconvenience formerly suffered after hemorrhoidal operations, the average layman still shrinks from having his piles operated upon. It has been estimated that at least ten per cent. of adults are afflicted with hemorrhoids. The great majority of these go on year after year enduring the pains and inconvenience they have rather than risk that of which they know not.

This dislike and distrust of surgery in general and rectal surgery in particular, together with the inalienable right of the patient to choose a less radical method of cure, is sufficient reason for again calling attention to a more conservative method of treating such cases.

Of the many methods suggested for the nonsurgical cure of piles, the so-called injection treatment is the one which has been most used and has given best results. Internal medication and local applications have their place and value in acute hemorrhoids and in acute exacerbations of chronic ones. But when the simple congestion and edema of the acute stage is followed by the vericosities, relaxation and infiltration of the chronic stage, then such treatment is of minor importance. It is in this stage and condition that intra-hemorrhoidal injections are often a suitable substitute for surgery.

Though introduced nearly fifty years ago and since endorsed by such eminent men as Andrews, Kelsey, Tuttle and many others, this method has never received the recognition from the profession that it deserves. While some have been

*Read before the Peoria Medical Society.

enthusiastic in its praise, the majority have either doubted or ignored its merits. This indifference and hesitation of reputable physicians has left a fertile field to be harvested for the most part by those less qualified and capable.

Only recently Drs. Edwards and Morley of St. Mark's Hospital, London, have indorsed this as the method of choice in uncomplicated cases of internal hemorrhoids. The experience of these physicians is of unusual value, connected as they are with an institution devoted exclusively to the treatment of rectal diseases.

Dr. Terrell of Richmond, Virginia, has treated over five hundred cases of hemorrhoids with very satisfactory results. His report of these in the *Journal of Surgery* is a glowing tribute to the effectiveness of this method in selected cases.

Of the value of this method of treatment when rationally used, there can be no doubt. Years ago Andrews collected records of over 3,330 cases so treated, with less than one per cent. of failures and with a mortality of less than one-half of one per cent. These results, while far from ideal, were remarkably good, considering that they were for the most part obtained by the incompetent and the unskilled. In more scientific hands this method has produced results which compare favorably with the best results of surgical methods. Drs. Edwards and Morley claim to have had no serious complications.

There are two methods of curing hemorrhoids by injection. The first is to inject into the pile a sufficient quantity of a caustic solution to cause the tumor to slough away, thus leaving an open sore which heals by granulation. This is the method formerly most used and the one largely responsible for those complications that brought the treatment into disrepute with the profession. Though ably advocated by some very capable physicians, this method does not appeal to me either in theory or practice. If sloughing and ulceration, with possible infection and hemorrhage, are to be expected from the treatment, then none of its supposed advantages are apparent. If removal of the hemorrhoidal mass is desirable, were it not much safer and certain to excise the tumor either under local or general anesthesia?

The second method is to inject a small quantity of a weak solution sufficient only to set up an inflammation and plastic exudation. This obstructs the circulation, causing shrinkage and atrophy of the pile without slough or ulceration. The injection should be followed by but slight swelling and tenderness, which subsides in a few days, leaving only a slight induration. This too soon disappears. This is the method now most in favor and the one which gives the maximum of good results, with a minimum of pain and complications. After numerous trials of both methods my preference is decidedly for the more conservative of the two.

The injection treatment is applicable only to uncomplicated internal piles, i. e., those which have their origin above the anorectal line and can be replaced and retained in case of prolapsus. External and thrombotic hemorrhoids, or internal ones complicated by acute inflammation, are not to be treated by this method. Most of the untoward results following this treatment arise from applying it to inappropriate cases.

Many drugs and combinations of drugs have been tried with more or less success. Solutions of phenol, either alone or combined with salicylic acid, borax, lead acetate, or ergot, have been mostly relied upon. Solutions of phenol alone seem to act as well as combinations. The antiseptic, anesthetic and caustic action of this drug renders it particularly applicable for this purpose. Those who aim to cure by producing a slough and thus destroying the tumor usually use phenol in solutions of 50 to 95 per cent. Those who desire only plastic inflammation use solutions of 10 to 25 per cent. Water, glycerine, or some bland vegetable oil may be used as a menstrum.

More recently quinine and urea hydrochloride has come into prominence in the injection treatment of hemorrhoids. My own results with this drug have not been as satisfactory as with other injections.

The technique for the successful application of this treatment is quite simple. But like many other simple procedures some experience is needed to secure the best results and to avoid the unpleasant complications that sometimes arise.

Having determined that the case to be treated is adapted to this method, the bowel is emptied with an enema and the patient placed in the lithotomy, Sims, or knee chest position. The offending tumors may be injected either while protruding or in situ through a speculum. If treated while protruding they must be replaced immediately to their normal position above the

internal sphincter and retained in that position. If from any cause they should prolapse later, the patient must be instructed to replace them at once.

My own preference is for treating through a speculum. A medium sized conical instrument with a sliding fenestrum is usually least painful to the patient and most convenient for the physician. After warming and lubricating it, the speculum is gently introduced with the fenestrum opposite the pile to be injected. The slide is then withdrawn sufficiently to let the tumor protrude through the opening. After cleansing the part with an antiseptic, the needle is introduced into the center of the mass and enough of the solution injected to slightly distend the tumor. From 5 to 15 minims will usually be required, varying with the size of the pile. After the injection the needle is permitted to remain for a moment, allowing time for coagulation, thus preventing the escape of the fluid injected.

One injection per tumor is usually sufficient, though in unusually large or vascular piles it is advisable to deposit a few drops of the solution in two or three different locations. This may be done by only partially withdrawing the needle and reinserting it in a different direction. If not too large, all the tumors may be injected at one sitting. If one treatment fails to entirely eradicate the tumor, it may be injected a second time after the inflammation has subsided.

If the technique is correct, the pain following the treatment should be but mild and of short duration. After-treatment is usually not required, and the following day the patient goes about his business with little, if any, more discomfort than before. Severe or protracted pain usually means that the solution has been deposited too deeply in the rectal wall involving the muscular coat; or that it has been injected below the anorectal line in the area supplied by the cerebro-spinal nerves; or that the tumors have prolapsed and have not been properly replaced; or that the case is not suitable to this method of treatment.

The principal advantages of the injection treatment of hemorrhoids over their surgical treatment are: 1. no anesthetic; 2. much less postoperative discomfort; 3. no necessary confinement to bed; 4. shorter or no detention from business; 5. no danger of stricture or incontinence; and 6. less expense to the patient. All these are important items in the alleviation of human suffering.

In again calling attention to intra-hemorrhoidal injections I do not presume to be advancing anything new or novel. I am merely reiterating and re-emphasizing an old and neglected method that will cure a large per cent. of hemorrhoidal sufferers who shrink from radical surgical procedures and who otherwise would remain uncured.

GLAUCOMA SURGERY*

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The fact that new surgical procedures are advocated for the relief of glaucoma from time to time is in itself indicative of a divergence of opinion, not so much in the direction of what we want to accomplish in this disease, but how best to retain what we have accomplished, namely drainage. It is very evident to all who have had the opportunity of seeing many of these cases over a long period that we have failed to attain this end. This I am inclined to think is due to many factors. In some measure to a lack of a definitely accepted classification from a clinical standpoint, by which I mean what state of clinical pathology is present at a given time. Is the root of the iris adherent to the posterior surface of the cornea or is it merely congested? Is the hyper-tension transitory or is it constant, varying only in degree, or is it due to an increased viscosity of the humors? For upon such deduction do we decide which procedure shall be employed in a given case.

The microscopist has demonstrated his findings in the so-called different forms of this disease very clearly and one might say uniformly. We however, find upon final analysis that the line of demarcation we make clinically is not so well defined under the microscope. This holds true even in the so-called simplex or non-congestive type. The transition from one form to the other is imperceptible.

A review of the literature upon this disease or symptom complex discloses a great variety of theories upon the etiology, mechanism and treatment, both surgical and nonsurgical. But upon

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only one factor are we all agreed and that is, that drainage is inadequate, regardless of what we may think of the factor or factors that precipitate such a state.

I am sure that we will all admit at this time that at best our surgical interference is but a makeshift procedure; by that I mean, it does not cure the disease, no more than a cranial decompression cures an intra-cranial neoplasm. It is true that some restoration of vision takes place in the congestive type, but that is only due to the reduction of the edema present. The fibers destroyed are functionless thereafter. That we are able for a time at least to maintain a lower intra-ocular tension is true.

In 1920 I read a paper before this section entitled "A Glaucoma Question." At that time I called attention to certain factors which probably play an important role in the mechanism of this symptom complex. I laid considerable stress upon certain points which had interested me for a number of years and which form in a measure the basis of this report.

The classification of the congestive and non-congestive types was adopted in preference to the so-called inflammatory glaucoma and glaucoma simplex, because I still believe that they are one and the same disease, varying only in intensity and depending upon the precipitant and the anatomic response of the eye ball to the abnormal state. I called attention to the observation that the extent of the cupping is no indication of the degree of intra-ocular tension, but is wholly dependent upon the anatomie thickness and constituent elements that go to form the lamina cribrosa. I stated at that time and must continue to believe that the absence of congestive symptoms in the so-called Simplex type or non-congestive glaucoma is due to the distensibility of the lamina cribrosa acting as a sort of compensatory valve, owing to its thinness and elastic fiber elements. It would therefore seem, that there are several questions that we should attempt to agree upon, before any real progress can be made in the way of treatment.

1. That the so-called congestive and non-congestive types of glaucoma (glaucoma simplex) are one and the same disease.

2. Is it possible to restore and maintain drainage through the natural channels in all cases.

3. If this is possible, are we always competent to judge in which case this can or cannot be accomplished.

If we can agree that the two types are one and the same disease, it then naturally follows that the treatment, particularly surgical should be the same in both cases, probably varying only, when surgical interference should be resorted to. As to the second question, I do not believe that it is possible to restore drainage permanently through the canal of Schlemm after the condition has existed for some time in a very large percentage of cases. As to the third question, I am sure that no man with an extensive experience, will make the positive statement that he can or cannot reestablish drainage through the natural channels in a given case.

In view of these facts and the failure in so many cases of surgical procedures used in the past that depended for their success or failure upon the ability to restore drainage by way of the Canal of Schlemm, I have adopted the procedure which does not depend upon this natural channel, but one that does establish a communication between the anterior chamber and the subconjunctival spaces.

The pathologic evidence we have had the opportunity of examining would indicate such to be the case. A broad iridectomy which should include the root of the iris, unfortunately frequently miscarries, or the incised area is filled with new formed tissue, that does not permit filtration. Cyclodialysis in which the ciliary body and iris were detached from the limbus over a given area usually readhered. In the so-called successful cases their remained an irido-dialysis. In the LeGrange operation which I have used a number of times, the result was dependant largely upon the formation of a cystoid cicatrix. Its value was enhanced by the proper removal of a small piece of the sclera at the limbus. The trephine operation as advocated by Elliott is but a refined technique of the LeGrange procedure and again depends upon the cystoid cicatrix, which unfortunately is very small, round and stands out like a nodule and attended with the dangers of post-operative infection. How frequently we fail to remove Descemet's membrane with this technique is not known, or the button left in the anterior chamber and the opening filled with exudate. The Zorab operation de-

pended upon drainage into the sub-conjunctival spaces by the establishment of a permanent fistula with a horse hair. The mechanics of this procedure appealed to me, but I did not believe that I could produce sufficient drainage and I found it difficult to retain the horse hair in position. Further I was afraid of the element of a foreign body, that might disintegrate and produce symptoms of irritation. Kurran's operation which I have not performed consists of establishing a communication between the posterior and anterior chambers by a small peripheral iridoctomy. At this time it does not appeal to me any more than the cyclo-dialysis operation.

In the irido-tasis operation we have a simple procedure, attended with no dangers and one that offers permanent drainage from the anterior chamber into the subconjunctival spaces, if one can make such a statement after four years observation. This to me is the logical direction of the fluids, in view of our present knowledge of the etiology and the pathologic specimens we have had the opportunity of examining. This operation I have tried to modify from time to time with very little success, except probably its simplification.

As I recall my first introduction to this operation by Dunbar Roy, the essayist laid great stress upon the drawing up of the iris into the wound which would produce a stretching of the radiating fibers of the iris thus widening the spaces of Fontana which would permit of freer access to the canal of Schlemm. The essayist at that time deplored the necessity of drawing the pupil so far upward which sometimes interfered with good vision and produced some disfigurement of the pupil. This I believe is no longer necessary.

I have performed this operation now for over four years and have been able to re-examine some of my early cases with most gratifying results. When I first started to do this operation I too expected the increased drainage to take place by the way of the canal of Schlemm. Today I am inclined to think this is not a fact and if any, is of so small moment that it need not be considered. In a number of cases I tried twisting the iris into a pedicle after I had pulled it through the wound, thinking this would increase the gaping of the incision, but have of late abandoned this detail owing to the formation of a small rounded and elevated bleb as we find following the trephine technique. I have further reduced the amount of traction I exert upon the iris, so that I obviate the badly deformed pupil that was drawn up so high. That we have drainage into the sub-conjunctival spaces is no more a question. Cases that I operated upon four years ago, disclosed a retained reduction of tension with a broad, slightly elevated area around the site of the incarcerated iris. In many of these cases we have been able to check up these facts with tonometric readings and perimetric charting, which were on the whole very satisfactory.

These cases were not picked, but operated on if they disclosed an increased tension, regardless of the fact that many were totally blind or possessed but light perception. The aim being to establish one fact only, the possibility of drainage through this channel that could be designated as permanent. This I feel we have been able to accomplish. The tension was taken in all of these cases and varied from 30 to about 60. Perimetric charts was not possible in all cases.

One can say that in all the cases we were able to re-examine after four years that a tension of 22 or better was disclosed. The fields taken did not show any improvement ,the vision likewise was about the same, although the patients claimed that their vision was better. They however were definite as to the freedom from all symptoms resulting from increased tension.

I have purposely avoided a detailed report on the cases operated on at this time, owing to the fact, that the class of cases would not permit an illuminating deduction, and those that could, would not be of sufficient number. These patients came from all parts of the state, most of them very poor, thus unable to return for examination; others of such age and state of health that travel was not possible. Those that we were able to see again had been operated on four years or more and disclosed a very satisfactory result from the standpoint of a retained drainage.

Technique used at the present time consists of a dissection of the conjunctiva from above down to the limbus over an area of about one-fourth the circumference of the cornea. A small

keratome is used and enters the anterior chamber as near to the anterior surface of the iris as possible, producing an incision of about 4 millimeters. The point of the keratome is then slightly tilted downward and as it is withdrawn it lightly brushes the iris which frequently will prolapse into the wound. If this does not take place, the iris is then grasped midway between the pupillary border and the root with a small bladed iris forceps and drawn into the wound just enough to keep the lips of the wound apart. It is well to force the iris into both ends of the incision as much as possible, thus reducing the possibility of this tissue falling back into its former position. The iris is then lightly stroked away from the wound with a small spatula and the conjunctiva brought together with one or two sutures which can be removed in four or five days. Atropine sulphate 1 per cent is then instilled and redressed in two days. Atropine is used until all the congestive symptoms have disappeared.

RESUME

That drainage does take place into the subconjunctival spaces.

That a lowered tension is retained for a long period.

That the operation is simple and attended with no dangers.

That other procedures can be resorted to if found necessary.

104 South Michigan Avenue.

DISCUSSION

Dr. Oliver Tydings, Chicago: I accept all that Dr. Goldenburg has said with the exception of one conclusion, and that is the possibility of always doing an iridotasis. Twice I have failed. There were several openings in the iris that had been produced by atrophy going on over a year. The patient was first seen by Dr. Loeb and the iris was so rotten that it could not be invaginated. In another case seen two years ago, I attempted to do an iridotasis and the iris was so rotten it could not be done. I had a patient in the office this week on whom I did an iridotasis in 1915. The tension of one eye was normal and the patient came on account of failure of vision. Observation showed that the failure of vision was due to cataracts in the good eye. The patient had been blind in the other eye for fifteen years before the iridotasis was done.

Dr. W. H. Wilder, Chicago: I think we must not conclude that iridotasis or iridencleisis is yet beyond the experimental stage. Of course, it has its opponents because we are practically doing a procedure that is unsurgical. That is, including in the wound a bit of very delicate structure that we know has a very direct connection with the uveal tract. As we always wish to avoid incarceration of the iris, we have grown to feel that such incarceration is an evil. The opponents claim that it offers an opportunity for infection that would not otherwise obtain. It is true that infection does obtain as it occurs after other processes, but I do not think it will obtain following iridotasis any more than in iridectomy, where a bit of iris is caught in the wound. I suppose it was this that first suggested this operation to Holth, because we have found that after a well performed iridectomy the tension increases after a time, and we have found that after a poorly performed iridectomy the results are better, so far as keeping the tension down. I have had considerable experience with this operation in comparison with trephining and iridectomy and I must say that while we approach it with considerable deference, I must admit that I have never done an operation for glaucoma where the immediate results were so satisfactory as in this. There seems to be less trauma and less inflammation following this procedure than in any other.

One little thing should be observed, just as in the trephining, and that is the making of the flap, preserving as much of the episcleral tissue as possible, the same as in the trephine. This is emphasized by Elliott in the trephine and is no less important in the iridotasis.

Dr. Michael Goldenburg, Chicago (closing): Relative to Dr. Tydings' remarks, of course it is well understood that if you cannot pull the iris into the wound you cannot do the operation. I had such an experience yesterday. Again, where the iris has degenerated and been replaced by fibrous tissue, it naturally cannot be done. Ordinarily it can be done in any case where the iris can be grasped and pulled into the wound.

Dr. Wilder's remarks were so complimentary and in view of his extensive experience, not only with this procedure but with every technique used for this condition, and his adoption of this operation is in itself an indication of its value. My results have been beyond my expectations. Cases that I operated upon four years ago look better than those operated on six months ago. Definite filtration is apparent, without bleb like bulging, and the tension remarkably low. When we started to do this operation about four years ago, our aim was to demonstrate if possible the ability to lower the tension and maintain it. Therefore eyes were operated on, although blind, as long as they had increased tension or were definitely glaucomatous. I tried this procedure in one case of buphthalamos in a baby of about six months. I saw the case recently and found a large bleb at the site of the operation. I believe that in the next case I shall make a larger incision and include more of the iris.

SPLITTING THE CORD IN INDIRECT INGUINAL HERNIAS*

C. B. Ripley, M. D.
GALESBURG, ILL.

In electing to present to this Society anything which deals with inguinal hernias, the writer realizes that he is handicapped at the outset by a very general belief that the whole subject is as threadbare as the beggar's coat.

Also, there is the risk of being considered presumptuous in daring to urge any modification of the well-established and uniformly successful methods of Bassini, T. Kocher, Wyllys Andrews and others.

However, the writer wishes to state that his only excuse for this paper is that he is thoroughly impressed with the need of improved technic in the case of old large hernias, and that he is convinced that the method he describes offers a solution to a very vexing problem.

Furthermore, he makes no claim for any originality in the matter and admits that several of the more recent works on surgery contain more or less brief notes on the method.

But, having had an opportunity to see it perfected and tried out in many difficult cases, he feels it essential to bring it thus definitely before the profession in the hope that others may take advantage of its possibilities.

The earlier periods of preparation for France saw thousands of herniotomies being done in our Base Hospitals, often by surgeons of small experience who still proudly tell of doing a dozen cases in a couple of hours. The later periods of the war saw hundreds of those cases being done over in our General Hospitals.

In justice to all—it should be admitted that



Fig. 1. Before Operation

Fig. 2. After Operation

speed was necessary in the first instance, and thorough going careful work was possible in the second instance, but the point to be grasped is that herniotomies are real surgery and require a well developed technic if they are to be 100 per cent successful.

Lieut. Col. Eric P. Quain, Chief of the Surgical Service of the Base Hospital at Camp Jack-

*Read before Section on Surgery, Illinois State Medical Society, Chicago, May 18, 1922.

son, S. C., early in 1918, realizing the necessity for improved methods in this operation, started to work out the possibilities of cord splitting as suggested or described by Dr. Torek of New York in the *Medical Record,* June, 1912.

The work was interrupted by overseas duty but was completed at General Hospital No. 29 at Fort Snelling during the Spring of 1919 and was described by him in a paper read before the State Society of North Dakota that summer.

As the writer was so fortunate as to be his assistant at Snelling, he had the privilege of seeing this work and helping to a small degree in the polishing process. He is indebted to Dr. Quain for much of the subject matter of this paper, for the privilege of copying his diagrams and for the "before and after pictures," which will be shown later.

It may be stated without much fear of controversy that failures in herniotomies are largely due to five well established causes,—namely:

1. Not reaching the highest possible point when amputating the sac.
2. Not closing the internal ring snugly and securely.
3. Not stripping the cord of all unnecessary tissue within the internal ring.
4. Not getting perfect apposition of clean surfaces when suturing the internal oblique and transversalis to Poupart's.
5. Not keeping the post operative patient in the horizontal position long enough, especially in the case of large hernias.

While it should be unnecessary at this time to bore you with a review of the anatomy of the groin, it seems well to describe briefly the important structures of the spermatic cord.

The cremaster muscle, having its origin from outer part of Poupart's which lies nearest the internal ring, forms a covering for the cord, and is so closely attached that surgically it must be considered as a part of the cord. It is the first element which must be recognized and removed from the field of operation after the cord is exposed.

This is accomplished by separating the fibres from Poupart's and dissecting them loose from the cord. If the muscle is heavy the cut ends are grasped in a forcep and laid to one side for later disposal.

The Illio-hypogastric nerve lies on the external oblique muscle above and the Illio-inguinal passes obliquely over the cremaster and both should be preserved.

Transversalis fascia lies over the vas deferens and vessels (spermatic artery and vein) and about one-half inch outside the ring—forms a sheath for both.

Under this fascia is found a greater or less amount of fat and loose areolar tissue.

Another nerve—the genital branch of the genito-crural—passes through the ring with the vas and vessels.

The spermatic vessels and the vas deferens together with the hernial sac are, of course, the most important structures of the cord with which one has to deal in operating on hernias.

The sac lies in front of and between the other two elements as they leave the internal ring and tends to push them apart. Lower down in the canal, where the vessels and vas are more closely associated the sac lies in front of them. As soon as recognized it is dissected free, throughout its whole length if possible, with as little trauma as is consistent with good work.

It may be opened whenever advisable and the finger passed within as a guide. The most important part of the sac freeing is at the neck or where it passes through the ring. With the ganze covered finger in the sac, with hernial content pushed back into the abdomen, the sac must be entirely freed from the ring throughout its whole circumference. In old hernias this area is largely fibrous and quite adherent to neighboring structures and if the work is not thoroughly done the sac can never retract fully into the abdomen. By this same act the internal ring has been cleaned of all tissues which would otherwise prevent a perfect ring closure.

This is not all, for above this scar-like area the sac for nearly an inch continues as a narrow tube leading up to the abdominal peritoneum. It is therefore essential to pull this tube down and to transfix or otherwise constrict at the highest possible point in order that later one may not find a stump sticking into the ring. In any case where this stump fails to entirely disappear the hernia is not cured: it may have been improved but with later trouble resulting it cannot truthfully be called a recurrence—it is rather a continuation. After complete freeing of the sac and before amputation, an upward pulling will disclose a triangle whose base is the sac and whose apex is formed by the junction of the vas

and vessels below. (See diagram 1.) It will be seen that the vessels lie at the outer border of the triangle as they come down from above, while the vas lies at the inner border as it comes up from the pelvis. Until this triangle can be seen, the dissection has not been completed.

After the sac is amputated and the stump has disappeared, in all cases where the ring will admit one finger or where larger than this, it seems wise to employ the extra precaution, about to be described, for closing the ring. This procedure consists in gently separating the vessels and vas where they are already only loosely connected and passing two or more sutures between them to close the ring.

By thus dividing the opening into two the size of each is just half as large as when the cord is not separated and while plenty of room is left for each half of the cord, a firm barrier is interposed between them at the weakest place in the floor and at the place where the sac must press out if the hernia is to recur.

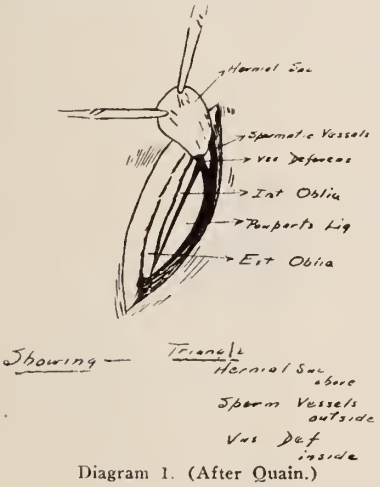


Diagram 1. (After Quain.)

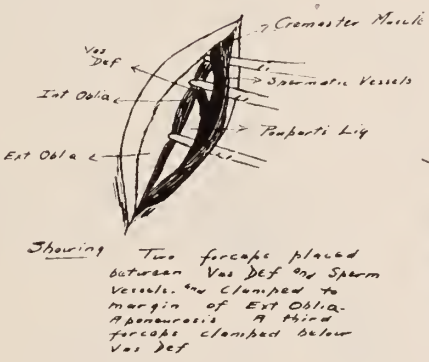


Diagram 2. (After Quain.)

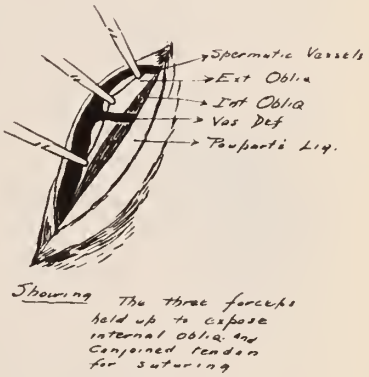


Diagram 3. (After Quain.)

If all unnecessary tissue about vas and vessels has been removed, the diameter of each opening need not be over one-eighth of an inch in the average case.

There is slight danger of constriction because the vas is quite rigid and the vessels will lie in a canal of which the internal oblique is the principal component and which is therefore rather elastic, though firm.

The technic of closing the ring and floor is as follows: From Poupart's side, two forceps are pushed between vas and vessels and clamped over the cut edge of the external oblique aponeurosis to hold the two structures separated and out of the way for first steps of closing.

Another forcep is similarly placed below vas and under cord. (See diagram 2.)

The three forceps, now thrown over onto the abdomen, hold the cord out of the field and allow full view of the internal oblique-transversalis lower border, which must be thoroughly cleaned to show a broad fleshy surface ready to be closely approximated to Poupart's. (See diagram 3.)

Depending on the size of the opening three to six interrupted sutures of chromic gut are placed between vas and vessels, starting at Poupart's side and near the margin of the ligament, passing through the entire thickness of internal oblique and transversalis from above downward, and then carried back through Poupart's near its lower border, and always being careful that the sutures are placed directly opposite on the two surfaces. (See diagram 4.) The internal ring is closed when these sutures are tied and the internal oblique will have the broadest possible approximation to Poupart's.

Several sutures are now passed in a similar manner below the vas to close the gap between the conjoined tendon and Poupart's. All loose tissue must be removed from the conjoined tendon before closure, if a firm union is to be expected. The first suture below the vas must be placed high enough to hold the vas rather firmly against Poupart's.

Quain advises that all sutures be placed before any are tied and insists that tying should begin at the top, and proceed downward to the one nearest the pubis. After tying, the sutures

are not cut, but are rethreaded and passed through both thicknesses of the aponeurosis of the external oblique which are lapped over each other, after the removal of the forceps which have held the cord out of the way up to this time. (See diagrams 5 and 6.)

Tying the sutures again, makes canal closure complete.

Quain likes to close without any tying of the sutures until they have been carried through the external oblique, stating that it makes for smoothness, reduces the amount of cat-gut to be absorbed, and increases the ease of drainage of any possible oozing, along the sutures into the deep superficial tissues where easily absorbed. It is a trifle more difficult, however, except with highly trained assistance, and the writer does not do it.

After the canal is closed, in the cases mentioned above where the cremaster is so large that its cut ends have been laid aside for later disposition, the ends are now pulled up over the sutured canal until a slight lifting is exerted on the scrotum, when the muscle is stitched to the external oblique.

No statistics are available as to the number of cases, in the army service, where this method of doing herniotomies was used, and the results, of course, are not known.

The writer's cases, where such painstaking work has been indicated, are too few in number to be of much value, although he has had no recurrences to date.

Quain writes that over seventy such herniotomies have been done in his clinic since the Fall of 1919 and that using the best "follow up" system available, he can report no recurrences.

As an example of what can be accomplished by the cord splitting technic, two photos will be shown. The first (Photo No. 1), a ranchman who for years had been practically incapacitated because of a big double hernia, which had not been operated on because no surgeon, among the many consulted, was willing to assure him that a permanent cure was possible.

The second (Photo No. 2), the same man about to leave the hospital, after operation, under local anesthetic, in which this technic was used.

To make this even more impressive, it may be stated that the hernial opening on the left side would admit the fist into the abdomen.

Today, three years after operation, this patient is perfectly well of his hernias and is actively engaged, on his ranch, busting bronchos, roping steers and doing a vast amount of other strenuous work on horseback and afoot.

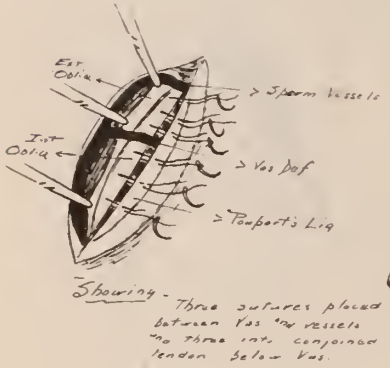


Diagram 4. (After Quain.)

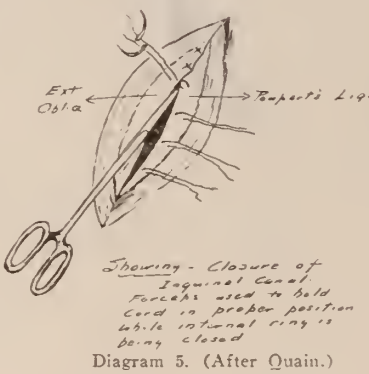


Diagram 5. (After Quain.)

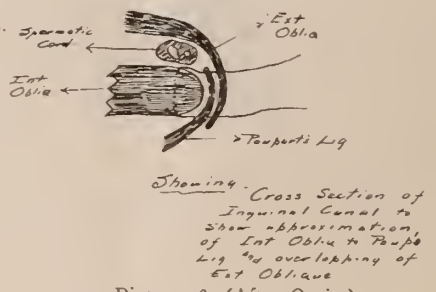


Diagram 6. (After Quain.)

One would not care to go so far as to say that the same result would have been impossible by any other method, but it seems permissable to consider it as proper evidence, at least, that this technic may be employed to good advantage in handling the large hernias.

DISCUSSION

Dr. R. W. McNealy, Chicago: There are many features of Dr. Ripley's paper that are of interest. Last year in the Cook County Hospital we did 4,750 major operations and of this number there were 575 hernias. Of these hernias, 90 per cent were inguinal hernias, 62 hernias, or about 12 per cent, had been operated on from one to four times before coming to the final operation. That affords one an insight into the opportunities that are to be had in the County Hospital for operating on recurrent hernias. I have studied a number of these at the time of operation and I have had an opportunity of examining a few cadavers in whom herniotomies had been done during

their life. Now, the findings which impressed were these: in the cases where a Bassini operation was done you will find a very loose or weak union between the internal oblique and transversalis and the shelving portion of Poupart's ligament. The strength of any hernial repair comes, I believe, from attaching fascial layers to fascial layers. Where you attach muscle directly to fascia so that the longitudinal fibers run parallel you have a weak repair. Following Dr. Andrews' imbrication operation you will find that a great deal of scar tissue develops and the union is very firm. It becomes almost impossible to separate the fascial union from Poupart's ligament.

Another point, when you pick up the cord in an inguinal dissection and lift it from its bed you do not find muscle but transversalis fascia, preperitoneal fat, and peritoneum. This fact draws one's attention to the importance of the transversalis fascia. In oblique inguinal hernias where you have a rather large internal ring it is necessary in my opinion to lessen the size of the opening in the transversalis fascia. Where you have a direct hernia and the posterior wall has given way, allowing the peritoneum to bulge, one must try to restore the strength by plication of the transversalis fascia and by union of the fascial planes of the muscles.

It is interesting to read that Lammeris at the University of Utrecht has done 620 indirect inguinal herniotomies, confining his work to high ligation of the sac, with no attempt at muscle or fascial repair. He reports only 27 recurrences. His results compare with those following any other method.

The weakness of the attachment of the internal oblique and transversalis muscles to the shelving portion of Poupart's ligament has been demonstrated many times.

Dr. W. H. Maley, Galesburg: I think Dr. Ripley made one strong point. I agree that high ligation of the sac is a most important factor. A thorough separation and high ligation of the sac is most important.

Dr. Edmund Andrews, Chicago: There are some points to say about this paper which seem to me entirely dependent on the pathology of inguinal hernia. Dr. Torek originally planned this operation on the following ideas, as I understand: All the vessels which constitute the blood supply of the testicle rise up near the kidney and the vas arises underneath. The vessels empty at a very wide open canal at the inguinal ring and the cord is formed only at the inguinal ring. According to Dr. Torek almost all hernias are formed because there is a certain amount of traction on the vas. He has brought forth a lot of evidence in support of this view. He further states that all dissections of a hernia will show that the vas lies between the vessels. I would like to take issue with him. I believe it is a common opinion that almost all inguinal hernias have a congenital origin, that we have a preformed sac due to failure of obliteration of the process vaginalis. If this is true it is not very rational to expect the sac to reform in exactly the same way as it does congenitally and that, therefore, all these precautions about the internal ring are more or less unnecessary.

The cases that were quoted by Dr. McNealy and his investigations at the Cook County Hospital are interesting. In the British Army it was routine to do as Dr. McNealy has described, to do nothing but remove the sac and the results seem to be almost as good. It is impossible to tell exactly what the results after herniotomy are except when they are followed up.

I believe there is improvement in this operation over Dr. Torek's. He uses silver wire in the closure which I believe is an inwarranted procedure.

There is another point of interest; the comments made by Dr. Ripley on the number of recurrences found in the Army. I do not believe they are all found in the Army. Actual figures regarding recurrences are almost impossible to get. You will see the large series that are quoted again and again by authors that are absolutely unscientific. I have been unable to find more than ten series of actually and properly controlled statistics on results. The best results are 6.5 per cent inside of a year and from that up to 10 per cent of recurrences inside of a year. These figures come from the very best hospitals in America, Johns Hopkins, Massachusetts General, Presbyterian of New York. In the direct form they run as high as 16 per cent inside of a year and in others as high as 25 per cent. These are also taken from the best hospitals in America. So I do not think it is necessary to say that all work in the Army was done hurriedly to explain the number of recurrences.

There is another point that seems to me has a great deal to do with this matter of careful closure and that is that at least 50 per cent of recurrences do not take place at the internal ring but at the lower end of the canal near the spine. They take place in the oblique form. I think the recurrences run as high as 50 per cent. after operation for indirect hernia and that the recurences are direct and that they do not take place necessarily at the internal ring which makes it a difficult task to close.

I would like to ask Dr. Ripley if in this operation it would not be better to cut the whole distance and split the cord the entire distance of the inguinal canal and bring out the vas close to the pubic bone and bring the vessels out at the top. Would that not be the logical succession and cause less tension on the vas?

Dr. C. B. Ripley, Galesburg (closing the discussion): I wish to thank the Doctors sincerely for their discussion. Answering Dr. Andrews' last question, outside of the fact that the vas and the vessels are so firmly united after the distance of an inch or inch and a half, depending on the size of the hernia, I should think his idea would be all right but we would get so much trauma and it would take so much more time that it would hardly be advisable, and is hardly worth considering.

As far as recurrences in indirect hernia go, everybody who has done any number of herniotomies knows it is essential to close the canal tightly, especially down by the pubes. It is just as essential to close it tightly

here as it is at the canal ring. I passed that part over rather hurriedly because of assuming that, in whatever type of herniotomy was done, that part was necessary.

As far as the "follow up" is concerned, it is very difficult. There is no other class of surgical work perhaps where, in case of unsatisfactory result, the patients so uniformly go to another Doctor. In the last year and a half we had a pretty good "follow up" system, however, for when we tried to collect for the job they have come in and kicked about the results if they have had any possible excuse for avoiding or trying to avoid payment.

Regarding Dr. McNealy's discussion I do not know whether we have all the same definition of direct hernia. My understanding is that in the direct hernia the mass pushes through the muscle before it into the canal. In an indirect hernia the two rings are directly opposite each other if the mass is big enough to destroy the canal. Where the ring is of such size that you can put your fist through it, it is opposite everything in the groin.

I was very much interested in all these discussions. I think Dr. Andrews spoke of Dr. Torek stating that the sac was directly between the other two elements. My statement was the sac was in front of and partially between them. If you have a small sac passing down from the internal ring it lies almost in front. When you have a larger sac it lies in front of the vas and the vessels and also between them, tending to push them apart.

So far as the statements about it not being necessary to do anything more than to get the sac cut off high enough, I wish that I could believe all I had to do was to do the sac work thoroughly and not to worry about the closure. I hope their statistics are true. I will say this, however: if I operated on a man with a hernia today and just did the sac work, and that man came back to me in 6 weeks or 6 months with a recurrence, I would certainly feel I had not done all I should have done or taken as much pains as I should have taken.

DIET DURING PREGNANCY*

EUGENE CARY, B. S., M. D.
CHICAGO

In dealing with the subject this evening, namely, diet during pregnancy, it has been deemed advisable, both for clarity's sake and from an etiological standpoint, to divide it into three subheads:

1. Diet during the first three months.
2. Diet from the third to the eighth month.
3. Diet from the eighth to the ninth month.

Under the first heading will be considered diets in the vomiting of pregnancy; and under the last will be considered diets in pre-eclamptic toxemias. There will be no reference to any medical care or the use of any therapeutic agents as it is not within the scope of this paper.

First Period. An insight into the physiology of early pregnancy must be considered in order to fully appreciate the dietary needs of the mother.

Lockhead and Cramer in 1908 (Canad. M. A. Jr. 8:—1918) pointed out that one of the chief functions of the placenta was to store up glycogen for the fetus; and that most of the fats in the fetus were derived from this glycogen. Duncan and Harding (Ibid.) determined that when this glycogen was used up and when there occurred a glycogen deficiency in the liver, a fatty infiltration of that organ resulted, and according to Wallis Mackenzie (Jr. Ob. and Gyn. of Brit. Emp. V28, No. 1, P. 11) when carbohydrates are withheld the fats are improperly metabolized and ketonemia results. Clinically it has been noted that starvation and diets poor in carbohydrates are prone to produce symptoms of nausea and vomiting in pregnant women. The term "Morning Sickness" is quite significant in itself, as it occurs at a time following the longest fasting period, when logically the liver has been depleted of its supply of glycogen to the greatest degree.

From these few facts it may, therefore, be gleaned that the most logical diet during this period of readjustment in the maternal metabolism should be one which would most quickly replace the depleted glycogen in the liver. This may most easily be accomplished by the administration of more carbohydrates and by diminishing the fat intake, which, if there be a faulty fat metabolism, would give rise to ketonemia and ketonuria.

In the last four years the author has come into contact with approximately 1,200 obstetrical cases, with the general run of nausea and vomiting among them, and he is happy to say that with two exceptions, has found it unnecessary to interrupt a pregnancy for the pernicious type of vomiting. Of these two cases, one was that of puerperal insanity, in which vomiting was a symptom and the other a woman, highly neurotic, who while under management, could be kept entirely free from vomiting, but who would immediately replase into the habit when sent

*Read before North Side Branch, Chicago Medical Society, Dec. 7, 1922.

home from the hospital. At no time did she develop any degree of acidosis.

The dietary employed, as far as possible, with these cases during this period, is as follows:

At night, after retiring, the patient is advised to eat two or three soda crackers. In the morning when first awakening crackers are again taken before arising. For breakfast, after some form of fruit, the patient is advised to take some cereal with milk (not cream) and sugar, toast and coffee. In the middle of the forenoon, four graham crackers and a glass of cold milk are taken. For luncheon, carbohydrate in some form should be conspicuous. In other words, to the regular mid-day meal free from fried food is added such things as boiled rice, cornmeal mush, baked potato, macaroni, toasted English muffins with syrup, etc. In the afternoon between four and four-thirty, tea with jelly or jam, sandwiches and cake are indulged in. The evening meal is eaten as usual, only again the starchy vegetables, bread and sweets should play an important part.

Milk sugar may be used to sweeten cereals and beverages if deemed advisable, as much greater quantities may be employed.

It will be noted that this diet plays a dual role, as it not only supplies adequate carbohydrate food, but also keeps a certain quantity of food in the stomach. This latter is important, as it is the person with an empty stomach who is most nauseated.

Second Period. It is the author's opinion that, at the end of the first period, if nausea and vomiting are in abeyance, the metabolism of the mother has so adjusted itself that a glycogen deficiency no longer exists. Therefore, the important consideration now is to supply a balanced ration with enough calcium to supply the fetal needs (but not too much) and enough roughage so that the intestinal tract of the mother will function properly.

Up to the third month the total calcium requirement of the fetus approximates about 200 mg., but for the total gestation period, the daily average is 70 mg. or more. (Editorial, Jour. A. M. A., May 14, 1922.) The ordinary mixed diet of the city dweller is deficient in calcium and this must be made up by some food with a high calcium content; the best probably being milk. One pint of milk contains at least 500 mg. of lime in a soluble form, some of which must be absorbed from the intestinal tract when taken.

The other important factor during this period is to combat intestinal stasis and still give a healthy balanced diet adequate to sustain life.

The author has worked out a dietary which has been used by several hundred patients with most gratifying results. On one occasion it was successful with a patient that had been trying various diets prescribed for over fifteen years without success. It is as follows:

1. Avoid anything fried or the taking of much milk (except as ordered). Eat no soups or stews, no pickled meats, hot bread, pie or cake.
2. Eat equal parts of bran and some cereal (grapenuts, oatmeal, etc.) with sugar and cream for breakfast, stewed and fresh fruits; vegetables (raw and cooked), graham, bran and rye bread; honey and syrup; olive oil in salad dressings. East moderately of any roast or broiled meat once daily.
3. Mineral oil, one tablespoonful morning and night.
4. Drink plenty of water (eight glasses daily).
5. Eat an apple at bed-time and drink a glass of water on arising in the morning.
6. Take small soap-suds enema for the first two days if necessary.
7. Eat four or five figs a day if the above is not sufficient.

It will be noted that numbers three and six are not strictly dietary, but they have been included here as they exist in the original anti-constipation diet list.

Third Period. During the third period of pregnancy two factors are to be considered, namely, the selection of a diet that, while nourishing, will, if possible, inhibit the excessive growth of the fetus and a diet that will not permit of the over-production of substances that may be irritating to the kidney.

As to the first consideration, it may be briefly stated that it is most important to strictly adhere to such a diet during the last month of pregnancy, as it is then that the greatest fetal gain occurs.

Gay (personal communication) has worked out such a diet, which is as follows: Breakfast: 5 prunes, 1½ oz. cereal, 1 egg, boiled, 1 slice toast, 1 cup coffee. 10:30 A. M.: 2 crackers and

a glass of water. Luncheon: Fruit or vegetable salad with French dressing, excluding, however, potato, peas, grapes and bananas. 3:30 P. M.: 2 crackers and a glass of water. Dinner at night: No soup. Roast or boiled meat or fish, 2x1½x½ inches in size, a baked potato or 1½ oz. mashed potato, 2 green cooked vegetables, 2 slices of bread ½ inch thick with butter and a gelatine dessert or some citrus fruit. On retiring: 2 more crackers and a glass of water. It is also to be noted that water is to be taken midway between each feeding time.

The other important consideration during this period is to guard against a beginning toxemia as it is at this time that hypertension usually makes itself known.

According to the work of J. L. Williams (Jour. A. M. A., May 7, 1921, Vol. 76, p. 1297) there is a marked increase of uric acid when such a condition arises. In normal pregnancy the uric acid concentration in the blood is approximately 1.94 mg. per 100 c.c., while in the pre-eclamptic toxemia it ranges from 2.10 mg. to 8.41 mg. per 100 c.c. and during convulsions may go as high as 11.70 mg. per 100 c.c. Williams also discovered that hypertension in pregnancy, unassociated with toxic symptoms, is not accompanied by uric acid retention.

From the above it would seem logical then, that if uric acid is associated with symptoms of such grave importance its manufacture should be kept at a minimum.

As we all know, the purin bodies are the precursors of uric acid in the body and therefore foods containing them should not be employed in the dietary. A few of the foodstuffs containing the greatest amounts of purins will be listed in order to give the relative values in the different articles. Those foods rich in purin bodies are:

Beef .....1.3 to 2.0	gms.	per	K.
Veal and ham.....1.1	"	"	"
Pork and chicken.....1.2	"	"	"
Salmon and halibut....1.1	"	"	"
Oatmeal 0.53	"	"	"
Beans 0.63	"	"	"
Peas and lentils.....0.38	"	"	"

Those poor in purin bodies and suitable to be used are:

Rice, flour and bread (white) none.
Potatoes, 0.02 gms. per K.
The white cereals.
Cabbage-lettuce.
Milk-butter.
Sugar and eggs.

It will be seen from this table that the meats and seedy vegetables will have to be eliminated from the dietary in toxic cases. The author has done this in his toxic cases, reducing his menu to cereals, butter-milk and alkaline waters in the severer ones.

CONCLUSION

To summarize:

1. From a dietary standpoint gestation may be divided into three periods.
2. In the first, it is essential to crowd carbohydrates and supply small quantities of nourishment at frequent intervals.
3. In the second it is necessary to overcome intestinal stasis and supply adequate calcium in the diet.
4. And lastly, in the third period, to overcome the tendency to overgrowth of the fetus and to adjust the diet of the mother in such a manner that there can not be an accumulation of uric acid and nitrogenous waste products in the body.

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NITROUS OXID AND OXYGEN IN OBSTETRICS*

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For the benefit of those not familiar with nitrous oxid, I feel that a few explanatory remarks will help you to understand me more clearly, as well as my subject. Nitrous oxid is a colorless non-inflammable gas, with a sweetish pleasant taste and anesthetic properties, soluble in water and with a chemical formula of $nitrogen_2$ $oxygen_1$ made by heating ammonium nitrate to a specific temperature. This gas is compressed under about 1800 lbs. pressure into a liquid stored in vanadium steel containers, until ready for use. It was discovered by Priestly in 1772, but its general anesthetic possibilities and knowledge of its effect and control were remote until 1844 when Horace Wells of Hartford, Conn., risked the knowledge of his experiments by taking this anesthetic to the stage of complete anesthesia and having a tooth extracted.

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His enthusiasm and demonstrations proved a failure in anything but a short anesthetic, on account of not knowing the proper administration, with oxygen as we use it today. E. Andrews of Chicago in 1868 reported a mixture of nitrous oxid and oxygen with which he had lengthened the time of maintenance and from that time on the study of the control of nitrous oxid with oxygen for a prolonged anesthesia has been a tireless scientific study by men whose names and reputations will forever adorn the halls of fame.

Today we have anesthetists all over the world administering this anesthetic for all kinds of long, tedious, dangerous surgical procedures lasting from one to five hours with perfect safety from the anesthetic standpoint. Nitrous oxid, if given alone, without air or oxygen, would cause death from asphyxia or oxygen deprivation in from three to ten minutes. The heart continues to beat after respiration has ceased, which proves that death is not due to circulatory failure. It is not toxic as is chloroform and ether. The symptoms of asphyxia are so plain, distinct and easily recognized; the antidote so simple that even one not experienced in its administration should be able to prevent fatal asphyxia.

The machines used today are most of them so accurate, that at all times the exact proportions of nitrous oxid and oxygen being administered are known, with the ability to change the proportion of either gas quickly. Each patient is a subject unto himself and his tolerance and oxygen requirements soon manifest themselves. Here the human body may be likened to an automobile engine with the nitrous oxid as the gasoline and the oxygen as the air with the anesthetic machine as the carburetor and when the mixture required by an individual is found the stages of analgesia or anesthesia may be deepened or lightened to meet the requirements. There are exceptions to this, as we will find patients and classes of individuals who cannot be anesthetized with nitrous oxid and oxygen and some of these cannot be anesthetized with ether and only with difficulty will they respond to the effect of chloroform. These are the types that are apt to prove fatal in the hands of an inexperienced anesthetist, when the stage of asphyxia is mistaken for the stage of excitement seen in chloroform and ether and the anesthetic is pushed in place of lessened. This is the fatal result of attempting impossibilities.

For convenience sake, let us suppose that we divide anesthesia into five different stages and let each patient's anesthetic tolerance be considered upon this basis. For instance Mr. Jones, a robust husky plethoric policeman, requires an anesthetic for a surgical procedure and when he has reached his tolerance of nitrous oxid and oxygen is then only three-fifth anesthetized. Now we use a supplement of either ether, or an ether-chloroform mixture composed of one part chloroform to five parts of ether and by degrees add these agents to our already constant flow of the mixture of the gases, gradually increasing the amount of the supplement to deep surgical anesthesia which means absolute relaxation. We have now given a safe sane anesthetic and by discontinuing the supplement when fully relaxed and not adding it again unless necessary, recovery is more rapid on account of the ability to almost immediately recall all of the effects of the nitrous oxid by inhalation of air or oxygen thereby removing three-fifths of our anesthetic leaving our patient with only two-fifths of an anesthetic, from which to recover. The effect of the amount of ether used in this case never goes beyond the point of stimulation and the depressing nauseating effect of deep ether or chloroform saturation with a prolonged recovery and and danger of anesthetic poisoning is avoided.

Who stimulates us morally and mentally to improve and progress and do greater things? For whom do we work and live? Our mother, our wife and our children. Who stimulates the progress of medicine? Man. Why? Selfish motives, the fear of pain and death and other things. Selfish motives, for the reason that man thinks only of himself in his scientific research work. So he thinks because he wants relief when in pain and sickness and wants to live just as long as he can.

Where would the science of obstetrics be today, were every medical student compelled to have given birth to a child as a part of his preliminary education? I know where it would be. It would be the highest of the medical sciences today.

It is an established fact that the women of today are taking up woman and child welfare and in doing so are becoming more conversant with the progress of medicine, especially in obstetrics and are rightfully demanding that they

receive some of the same consideration relative to skill, relief from pain and better technique in their child-bearing period, just as man does for himself in such surgical procedures as are necessary. Civilization and social environments with its artificial dress and the prolonged use of tight corsets dating back to the time of Washington, when the women had waists like wasps and wore hoop skirts, have rendered woman less and less physically fit to perpetuate the race on account of the changes naturally brought about in the shape of the pelvis. Civilization and artificial refinement have developed a higher nervous organization, which in turn loses the power of resistance until it has become imperatively necessary for the pregnant woman to be guarded against and protected from the dangers of excessive and too prolonged suffering. Pain, physical and mental, predisposes to surgical shock and lessens resistance, increases the danger of puerperal complications and delays convalescence.

There are several requisites whereon the success of obstetrics depend: First and most important is that the physician be practical in every detail, and thoroughly familiar with the technique and science of obstetrics. That doesn't mean that he must only be present and deliver a child normally or instrumentally, to tie the cord, deliver the placenta, and repair the perineum, but his obligation begins from the earliest period with which he can get the expectant mother to report to him and agree to allow him to make the necessary preliminary examinations and to watch her throughout her course of pregnancy. 'Tis the physician who should be consulted relative to diet, exercise, dress, preparations, etc., and these suggestions are so valuable at this time. The urine should be examined every one to two weeks depending upon the stage of pregnancy, as should the general physical conditions, the blood pressure and growth of the fetus and later the fetal heart sounds, position and placental site. With these precautions your patient should go into labor in the pink of condition and eclampsia should be considered a reflection upon the obstetrician, except in such cases where the patient has consulted him at the last moment. It is our duty to explain to our patients why these precautions are so essential to their welfare as well as our reputation, and it is a part of the education we owe the public.

Asepsis is imperative. Do you think it fair to the confiding mother and family for you in your daily routine of practice to open an abcess, dress an old infected wound, visit a case of scarlet fever, diphtheria, tentanus, and other conditions of infectious and contagious natures and then to deliver a mother without protecting her by wearing a sterile gown and gloves and by using the same grip, scissors, forceps and other contents from this grip?

One of the first things I did when I began to practice medicine was to get me an obstetrical bag and fully equip it for every type of emergency that I might meet with in my obstetrical cases, and to this day this bag has never seen nor been near anything but a clean obstetrical case and has been overhauled, fumigated and repacked sterile after each case and left thus until necessary to use it again. I feel that I have been fully compensated for my trouble in as much, as I have not been so unfortunate to have had a case of puerperal sepsis. For the past six years I have refused cases that have called me at the last moment, except where they have been under the care of some other physician and he could not be reached at the time. In this instance I would take care of the case until their physician could be found. The result has been that I have not had an eclampsia during this period, but have had five cases that had quite severe albuminuria with threatening eclampsia and averted same by recognizing the condition early enough to give them the proper treatment and care. You may think this is too much trouble and work but the gratitude and appreciation of the intelligent class of mothers will show you that you have only done your duty and at the same time built up your practice on a good, firm, honest scientific basis.

Next in importance is the anesthetic that we choose, which is, the one we consider the best, and then only after careful practical study and application of each of those at our disposal today. I have no criticism to offer against any of them and have the greatest respect for any physician who is kind and humane enough to use methods to relieve the suffering and shock of labor. After a careful study and practical use of chloroform, ether, morphin-scopolamin narcosis and nitrous oxid and oxygen I have decided that the latter is the best of them all and have used it exclusively for six years, beginning when the os is softened and dilated from one to two inches.

The first stage of labor should really be divided into two parts, the first part being the preparatory or false labor, beginning with the first pain and ending when the os is dilated one to two inches; the second part or true labor beginning then and ending with full dilatation.

The personality of the physician, together with his ability and love for his work is also a very necessary factor. The intelligenee and co-operation of the patient is another. In other words it means team work between you and your patient. What does confidenee mean? Simply this, without it your results are those unavoidable, while with confidence, the mother will respond to every suggestion and request. She does not fear labor, nor its results, as she knows positively that you are going to bring her through this diffieult and dangerous journey safely. This confidence overcomes to a degree the ill effeets of kind friends and neighbors who measure the great services they have rendered her by the proportion of terror and fear they have produeed by their advice.

Your equipment for the delivery should consist of your obstetrical bag, a gas maehine and two or three extra cylinders for emergency and a can of ether. In your preliminary your patient has been instructed as to the nature of nitrous oxid with the assurance that it is not twilight sleep; the value of co-operation and confidence, the list of what she should have, with the instruetions that you be notified as early as possible upon the first signs and symptoms of the first part of the first stage of labor. By doing this you will be prepared and ready for a hurry call if necessary.

My position is seated on the edge of the bed with the patient's right knee against my chest, a sterile glove on my right hand, my machine on my left within easy reach of either my nurse or myself. The nurse controls the face piece with the exhalation and air valve continually under my supervision.

I begin with a mixture of five to eight per cent oxygen. That would mean ninety-two to ninety-five per cent nitrous oxid. With this mixture the patient gets a slow blood saturation of the gases at the same time assurance from myself and nurse that at no time will she be in danger and to disregard any of the unusual sensations she will experienee sueh as the numbness which will come over her entire body beginning at the hands and feet, yet she will have complete muscle control. Also that the floating and other sensations are the same as other patients experience when taking an anesthetic, so she too must expeet them, and to relax and obey every request I make. I ask the privilege of doing this alone, without the aid of any of the family on account of the patient's inability to grasp the meaning of requests from several at the same time. Sometimes the stage of excitement supervenes at this period and it may be neeessary to allow your patient to come out entirely from the anesthetic and to explain to her the futility of excitement, crying and resistance.

In the primipara and young, nervous, hysterical type of girls the stage of exeitement may be quite difficult to control, this being, usually, the first time in their lives that they have ever taken an anesthetic. Some of the vivid exeiting dreams that they have make it difficult to finally reduce them to a quiet stage of eo-operation. Patients whose pains have been spoken of as unbearable up to this period appreeiate the relief that they receive and are the easiest to control. Within two to four minutes I begin the ironing out of the perineum, using a sterile tincture of green soap as a lubricant. The perineum will appreciably relax and with two or three fingers in the vagina a little assistance to the cervix will have terminated the first stage in from ten to twenty minutes, as the cervix softens readily, relaxes and retraets under nitrous oxid. A rigid cervix, however, will not respond to this or any other anesthetic, and should it exist. I give a hypo of morphin sulphate gr. 1/4 and atropin gr. 1/150 repeated in three hours if necessary.

The blood saturation of nitrous oxide and oxygen usually requires from three to five minutes, and when once established, renders the patient readily susceptible to any change of the mixture of the gases, as is necessary from time to time. My mixture is then changed according to the indications exhibited by the patient, which will be the depth of the analgesia or anesthesia that this mixture has obtained within this period of time. This would give us an indication of the susceptibility of the individual. Now fifteen to twenty per cent oxygen is used. The intention being to carry your patient in the stage of analgesia, in which she will know everything that transpires and yet feel only a stretching and pres-

sure, without pain. I, myself, being the judge of the depth, as quite frequently the patient complains throughout of how she is suffering, yet when all is over she will say, "yes, I knew everything you said and could feel a stretching and pressure, but it did not hurt me." The patient's remarks during her labor are often very disquieting to the members of the family present, but a word of assurance from you will quiet them.

At the termination of the first stage unless the pains are frequent and severe I give per hypo four minims of Park Davis & Co's obstetrical pituitrin repeated in twenty to thirty minutes should it be necessary. The perineum is protected and head usually delivered between pains, unless they are so frequent and severe that there is danger of laceration on account of too rapid delivery. Here a small amount of ether may be added to soften the contractions and better to relax musculature. During the last eight or ten pains of the second stage the analgesia is deepened to a light anesthesia, unless the patient becomes unmanageable in this stage. If so, bring her back to the point of control. Immediately upon birth of the occiput the nitrous oxid valve is closed and the patient receives pure oxygen during the next three or four minutes, with the result that she is awake immediately, the oxygen replacing the nitrous oxid in both mother and child.

I avoid cyanosis and too much rebreathing. Partial rebreathing conserves the anesthetic and the carbon dioxide, which acts as a slight stimulant. Rapid breathing takes place during some of the stages of excitement and is controlled either by the exhalation valve on top of the face piece, or by opening the air valve and allowing the patient to take from three to six breaths of air. The rebreathing bag should be kept from one-half to two-thirds filled at all times and should be close to the face piece as possible on account of the energy necessary and uselessly spent in rebreathing through a rubber tube back and forth in which the distance is from two and one-half to three feet from the face piece to the rebreathing bag. With the bag close to the face you have better control of the carbon dioxide percentage, the gases are warm and you can determine the depth and rhythm of your respiration by the expansion and contraction of the bag. The expense has never exceeded $1.25 per hour.

To Summarize. In the past year I have made a total of 129 deliveries which were as follows: primparae, 77; multiparae, 52; male, 55; female, 75; homes, 91; hospitals, 38; painless, 122; 6 complained of some pain, 1 no relief; lacerations, 28; occiput posterior, 8; breech presentations, 7; instrumental to perineum, 6; instrumental high application, 1; rigid cervix, 3; versions, 2; placenta previa lateralis, 1; ether at delivery, 41; maternal deaths none; fetal deaths, 8: two breech deaths due to prolonged delivery of head, 1 on account of complete loop of cord around abdomen with a tie and tension on cord at delivery producing asphyxia; 1 from failure of closure of foramen ovale; 1 form placenta previa and premature separation of placenta, 7 months; 3 premature births. The average time of delivery was: primparae, 49.5 minutes; multiparae, 21.3 minutes.

The advantages I have found in this anesthetic compared with others have been absolute freedom from danger to mother and child, lessening the length of time of the 2nd part of the 1st stage and all the 2nd stage of labor, the absence of shock, exhaustion, hemorrhage and puerperal complications following delivery and better control of the termination of the second stage; painless delivery of the placenta, stronger, healthier mothers and babies and a better production of milk proven by the rapid gain in weight of the babies by the end of the second week. I find less cyanosis in the babies and no loss of uterine muscle tone, but an improvement instead. The length of time required in primiparas with nitrous oxid compared with other anesthetics is usually about one-third or one-fourth. Another advantage is that you have oxygen for any and all emergencies that might arise with the mother or child as a result of version, breech, instrumental delivery or other complications as well as a cyanosed or anemic baby. I have seven babies whose lives were threatened from different causes, not from the anesthetic, however, and were saved by having the oxygen for immediate use. The above technique of the administration I have worked out myself from experience in the last twelve years in administering nitrous oxid and oxygen with or without a supplement of ether in over 10,000 cases without a fatality. I consider this technique a decided improvement over the interrupted method, which is being used today by most obstetricians who use nitrous oxid

as follows: The administration of the anesthetic usually begins about the time of the termination of the first stage of labor or when the os is fully dilated with the head engaged. The mother is instructed to give a warning at the first sign of each oncoming contraction and is then given three to six deep inhalations of pure nitrous oxid, or a mixture of N_2O and O and told to hold her breath with the last one and bear down when the contraction has reached its height. This method has been quite successful, yet there are a few points that were overlooked by a great many who used it and proclaimed it unsuccessful.

These points were best described by Guedel of Indianapolis. (Blackboard demonstration.)

Statistics of the comparative safety of anaesthetics by Louis Frank in the *Ameriran Journal of Obstetrics,* New York, 1915, show that the average mortality of chloroform is one in three thousand, ether one in about thirty thousand, and nitrous oxid and oxygen one in two hundred fifty thousand administrations. Dr. Miller, in the *Journal,* 1912, quoted mortality in nitrous oxid as being from one in 100,000 cases to one in 750,000. H. C. Woods, Jr., in his study of the cause of death in 23 cases in which morphin-scolopalmin has been used stated that nine of these were due to the drugs and the death rate being one to 250 narcoses. In speaking of its use in obstetrics he makes this statement, "It is one of the cardinal principles of medicine to avoid the use of narcotics and morphin with infants and it is difficult to believe that its use is wholly devoid of danger and injurious action." S. Calvin Smith, instructor of medicine, University of Pennsylvania, in his treatise on heart infections published 1921, says: "Nitrous oxid is the safest anesthetic for use in a patient suffering from heart infection. While the gas raises the blood pressure and may thus induce apoplexy, the possibilities of blood pressure increases are reduced to almost nil in nitrous oxid by diluting with oxygen in customary proportions."

Crile summarized his experimental findings, after 15,000 cases of nitrous oxid anesthesia without a fatality as follows: Nitrous oxid and ether anesthesia alike cause an increase in H-ion concentration of the blood, the spinal fluid, and the bile and progressively decrease the reserve alkalinity of the blood. Ether causes marked histologic change of the brain, adrenals and the liver, these changes being identical in kind with the histologic lesions caused by acid injection or activation of any kind. Nitrous oxid and morphin each measurably protects the brain against histologic changes due to infection, while ether increases the damaging effect of infection.

A CASE OF PAGET'S DISEASE INVOLVING THE EARS, NOSE AND MOUTH*

G. W. Boot, M. D.

CHICAGO

Wm. H. Age 58. R. R. Conductor. Father of two children one of whom died at birth while the other is living at the age of 30. His father died at 58 of unknown causes. His mother died at the age of 70 of dropsy. He has three brothers living. One brother died as a result of an accident. One sister is living. One sister died at 60 of heart disease and one at 50 of unknown cause.

Previous illness. Patient had typhoid at the age of 48. Was sick only 10 days so the disease was probably wrongly diagnosed. A short time before this he had pains in his left shin. When he recovered from this illness he had a bronzed color on the left shin and some swelling which his doctor diagnosed as due to syphilis and gave him one injection of salvarsan. The shin was bowed and thickened at this time. About 2½ years ago patient began to lose his sight.

He has always had a large head. As a young man he wore an 8¼ hat. For the last 30 years his head has slowly enlarged until now he wears an 8⅝ size hat. He has had to have his hats made to order for 30 years.

His height as a young man was about 5 ft. 9 inches. Now it is 5 ft. 2¾ inches—a loss of over 6 inches. His spine is almost immovable. Lumbar puncture has been tried on him on three different occasions and each time it was found impossible to get the needle between the vertebrae.

He does not have much headache as a rule. Three years ago he began to see double. He could see two headlights coming where there was but one and only when they came close would they close up and become one to him.

About ten years ago he noticed an exostosis

*Read before Section on Eye, Ear, Nose and Throat, Illinois State Medical Society, Chicago, May 17, 1922.

forming on the inner side of the left orbit. Later an exostosis developed in the corresponding location in the right orbit. About eight years ago he began to have trouble reading the ear seals. He would have to get them in a good light in order to make them out.

About three or four years ago he discovered an exostosis developing on the alveolar process of the right maxilla where the molars had been extracted. This exostosis is now 3 cm. long and 2 cm. wide and extends to the former level of the free surfaces of the teeth.

He lost the sense of smell 15 years ago. Ten years ago he had bone removed from the left side of his nose. He had exostoses removed from the orbits by Dr. Suker in 1921. I removed a portion of an exostosis that completely filled the left side of his nose in January of this year.

At the age of 14 he was kicked on the right maxilla by a horse. At the age of 15 he fell from a horse and struck on his back. He was unconscious for a long time—he does not know how long—and lay out all night. At about 20 he had his nose broken by a blow from a billiard cue. He could not smell afterwards. At one time while coupling cars he got his head badly pinched behind the ears by the projecting ends of the cars. At another time while grasping the hand rail of his car he suffered a spontaneous fracture of the left humerus. Fifty days later while "just fooling" the same bone again broke spontaneously.

Physical examination. Patient is an elderly man with marked bowing of the spine in the thoracic region. His head is large, particularly in the frontal region and on the right side. The eyes are divergent and each orbit shows a scar at its inner border resulting from the operations done to remove exostoses. There is a small fistulous opening in the scar in the right orbit, from which a drop or two of pus can be pressed. Apparently there is a small sequestrum trying to work out.

There is an exostosis on each alveolar process of the upper jaw where teeth have been extracted. The arch of the hard palate is much narrowed in consequence. There was an exostosis in the left naris that completely filled it when I first saw him. I chiselled out a portion of it so he could breathe freely but made no attempt at complete removal.

X-ray pictures show the cranium to be much thickened and very spongy. The bones of the calvarium are seen to be at least an inch in thickness with the outer surfaces very indistinct and worm eaten in appearance, so that it is difficult to tell just where the outlines of the bones are.

The mandible seems to be free of disease. The left humerus presents some thickening at the seat of the former spontaneous fractures. The tibiae show thickenings and irregularities with convex anterior bowing. The temporal arteries are markedly tortuous and calcified. They give the impression that with a little more pressure than ordinarily used in examination they would fracture like an egg shell. The examination of the urine is negative for albumin and sugar.

His vision is too poor to permit him to read the newspaper but sufficient to allow him to get around. The visual field of the right eye is much limited. Hearing is poor. With the right ear he hears the whispered voice at about 30 cm. With the left ear the whisper is not heard, but he hears the spoken voice close to the left ear. Bone conduction for A (Edlemann) is prolonged about 30 seconds. Weber is lateralized in the left ear. Rinne R. negative, L negative (not heard by air conduction). Low limit R. 128 dv. L. $C_3 = 512$ dv. High limit R. $C_5 = 4096$ dv., L. $C_3 = 1024$. Right drum membrane normal in position but irregularly thickened. Left drum membrane normal in position, irregularly thickened. Lustre gone.

He is much depressed mentally; thinks he is going to die soon and talks much of committing suicide. He sighs and breathes rapidly when any one is near apparently trying to convince the bystander of his desperate condition. He sleeps poorly.

Such cases as this are not uncommon. Many reports of them are to be found in medical literature, particularly in the English journals where Sir. James Paget has written several articles about them and given such clear descriptions of them that his name has been given to the disease. Apparently it is more common in England than it is here.

It is a disease of males more particularly and of advanced life. It does not seem to have any marked tendency to shorten life, patients with it having lived to be over 80.

There are two types of the disease. In the

more common type the legs particularly are affected. The tibiae become bowed with the convexity forward. The femur also becomes unduly curved. The spine becomes kyphotic so that the stature decreases. The head projects forward and looks downward.

In the second type the head enlarges from the thickening of the cranial bones as in the case here reported. This thickening is more or less general but is apt to be particularly well marked in the frontal region. The inner surface of the cranium remains smooth but the outer surface becomes rough. There is a change in the shape of the skull as if it were made of unbaked pottery that had slumped somewhat and had the base of the skull pushed upwards so as to shorten the vertical diameter and cause narrowing of most of the foramina at the base.

These cases show marked arterial changes. The arteries become calcified and brittle, particularly the temporal and tibial arteries. The disease is confounded at times with acromegaly but is distinct in character and does not show the changes in the hands and feet that occur in acromegaly.

It is related to rheumatoid arthritis and to otosclerosis. The etiology is obscure It is connected with trauma and probably with focal infection. Possibly as a result of trauma the arteries supplying the bones are damaged and the process becomes localized in the bones of which the arterial supply is abnormal. The bone is irregularly absorbed and redeposited so that the normal Haversian systems disappear and in their place a very irregular structure is formed. Osteoclasts destroy the original bone and the new bone formed does not approach the normal as will appear in the section I will pass around.

The changes in this disease have a marked bearing on the changes in otosclerosis. They appear to be due to the same process but with a much wider area of involvement and a less effective reaction so that the bone formed remains much more porous than in an old otosclerosis. The case reported, without showing marked evidence of middle ear catarrh, has marked prolongation of bone conduction for a man of his age, marked elevation of the lower tone limit as well as marked lowering of the upper tone limit. The lowering of the upper limit may be the result of narrowing of the internal auditory meatus or it may be the result of a pinching of the fibres of the nerve as occurs in otosclerosis. Damage to the nutrient arteries of bone, either by trauma or from focal infection elsewhere I feel sure will some day be proved to be the cause of osteitis deformans, arthritis deformans and otosclerosis.

25 E. Washington St.

DISCUSSION

Dr. Joseph C. Beck, Chicago: It is really important in a condition Dr. Boot did not speak of, and that is leontiasis ossei, which must be considered in connection with this subject. I have never seen a case such as Dr. Boot described, but have had two cases of leontiasis ossei and if the treatment had been carried out as advised by Dr. Boot the result would have been serious. The cases of leontiasis ossei succumb to an operation, from sepsis and great exhaustion in the majority of times. The microscopic examination of the decalcified bone is absolutely characteristic. In the leontiasis ossei the bone corpuscles are very few, there are no new osteoblasts at all, the normal bone is destroyed, and the picture is much the samee as in otosclerosis. The bone is very rich in blood supply.

I want to ask Dr. Boot how the bleeding was controlled when he operated. Whether there was much bleeding from the nose.

The microscopic examination is the important feature. The fact that he thought that otosclerosis might be along the same nature of arthritis deformans is another subject, and I do not believe there is any connection between them.

Dr. G. W. Boot, Chicago (closing): In reply to Dr. Beck's question in regard to bleeding. I was warned in advance not to operate on this case as they all died, but this man did not. As to Dr. Beck's belief, I had my fingers crossed.

THE BASIC PRINCIPLES OF DEEP X-RAY THERAPY

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Although the uses of deep therapy are not limited to the treatment of cancer, yet that is the field of their possible greatest benefit to humanity. There is no question but that x-rays are capable of healing cancerous growths, provided these growths are located in an easily accessible position, and it is within the experience of everyone to have seen epitheliomata and other skin lesions promptly disappear under x-ray therapy. The problem confronting us is that of bringing about a similar result when the diseased area is within the body. Complicating this problem is that of bringing about this desired result without inflicting irreparable injury to the normal tissue. While the problem has not been en-

tirely solved, yet the recent advances made in apparatus and technique are a great step forward in this direction.

By deep therapy we mean the treatment by x-rays of disease lying within the depths of the body, and in its more recent use we mean specifically, treatment by x-rays of very short wave lengths, as short as .25 A° units, produced by current of very high voltage. The x-ray apparatus heretofore in use for therapy has produced x-rays with wave lengths measuring as high as 17 A° units. Such rays entering tissue or water (which are practically identical in their absorbing powers) diminish about twenty per cent. for each centimenter traversed and have consequently been more than half absorbed by traversing three centimeters of tissue. With such rays it is obviously impossible to produce a deep effect without administering a tremendous dose to the overlying tissues. The situation is really more difficult than this, since x-rays are a heterogeneous mixture of rays of various wave lengths, many of which are very long and which consequently have a high absorption co-efficient. In spite of these serious obstacles it is possible to administer effective doses of x-radiation in the depth.

Why are epitheliomata and many skin lesions obviously healed under x-ray treatment? It must be because various cells differ in their sensibility to x-rays. If we can take advantage of this difference in sensibilities we can produce the desired effects in diseased tissues, and this is in fact possible, provided that all cells in the area to be treated are subjected to identical physical conditions; that is to say, the same amount of the same quality of radiation, and if this condition is fulfilled we can reasonably expect that our efforts in combating the disease will be successful. Here is the key to the whole situation, namely, identical physical conditions, or stated in other words homogeneous radiation. Let us suppose, for example, that we have on the surface of the body two areas side by side, one pathological and one normal. Let us further suppose that we cause to fall upon these areas similar amounts of radiation of equal quality. Our condition is thus fulfilled because both pathological and normal tissues are being subjected to identical physical conditions. Now let us suppose that the pathological area is ten centimeters below the normal area. The problem remains the same, but the conditions are entirely changed, and the two areas do not receive the same amount of radiation. The normal area received more radiation than the diseased area for two reasons: First, because it is nearer to the anode of the tube. The amount of intensity in any form of radiant energy diminishes with the square of the distance, that is, if the distance be doubled the intensity of radiation is diminished to one-fourth. Second, because the intensity is diminished by the absorptive power of the tissue. Neither does the diseased area receive the same quality of radiation, because a beam of x-rays is a heterogeneous mixture and contains many rays which are absorbed by the first centimeter of tissue. Thus it is seen that in our problem neither quantitative nor qualitative homogeneity have been attained. If we can obtain a homogeneous form of radiation we will have approached the solution of the problem. By a homogeneous ray is meant a ray of such quality that its composition is not markedly changed by its passage through tissue. This defines qualitative homogeneity. Equally important is quantitative homogeneity, by which is meant the distribution of equal amounts of radiation in a space of reasonable size. A carcinoma for example is not a small focus of disease but extends through the lymphatics over a wide area all of which must receive a carcinoma dose, and it is worse than useless to radiate only the primary focus of the disease.

Our problem is now seen to be one of quantitative and qualitative homogeneity and as Prof. Dessauer has said, "As soon as quantitative and qualitative homogeneity appeared possible a new hope was aroused that it might be possible to successfully combat cancer." Success can be thus attained and its foundation lies in Dessauer's principles:

1. The basis of deep therapy is founded upon the biological experience that different cell forms exhibit different sensibilities to x-rays.

2. Different cell sensibilities are manifested to different degrees of hardness of x-rays.

3. These differences in sensibilities depend upon the production of a field of homogeneous rays.

4. Heterogeneity is detrimental and success cannot be expected if the degree of heterogeneity exceeds the difference in the sensibility of the normal and pathological cells. This is called the law of effective action, and can be stated thus.

Intensity x time of action x sensibility of the pathological tissue must be greater than or at least equal to a similar product substituting the normal tissues.

5. Homogeneity must be both quantitative and qualitative, that is, an equal amount of rays of equal intensity must be delivered at all points in the area to be treated. Rays are considered homogeneous for practical purposes when their intensity does not vary more than five per cent.

6. When the field is homogeneous the reaction of the different cells depends upon the intensity of the radiation.

7. The seventh principle is merely another way of stating the fifth.

From these principles it is readily seen that radiation is contraindicated when the entire field cannot be made to receive an effective dose. It is obvious therefore that it is necessary to calculate in advance of radiation the amount and quality of the radiant energy to be received at every point. How this may be done will be discussed later.

How may homogeneity be obtained? First, by the use of a greater distance between the target of the tube and the skin. The importance of this is readily shown by a simple example. Suppose that we have an area to be treated ten centimeters below the surface of the body and suppose that we place the target of the tube at a distance of ten centimeters above the surface of the body, then if we suppose the amount of radiant energy received by the skin to be one-hundred, the amount of radiation received by an area ten centimeters below the skin will be only twenty-five, since radiant energy diminishes according to the square of the distance and since the square of one is one and the square of two is four the point in the depth receives only one-fourth of the surface dose. Now suppose that we place the tube at one-hundred centimeters from the skin the conditions are much different and since the square of ten is one-hundred and the square of eleven is one-hundred-twenty-one, the deep area receives ten-twelfths or about eighty-two per cent. of the surface dose. Second, we may approach the establishment of homogeneity by the employment of very hard x-rays produced by high-voltages and heavy filters. A bundle of x-rays which have passed through a few millimeters of aluminum is still comparatively heterogeneous and contains many rays of long wave length which are easily absorbed by the superficial tissues. On the other hand rays which are passed through heavy filters such as copper or zinc are but little changed by their subsequent passage through lighter materials, such as water or tissue. The question of what voltage is necessary can be answered by calculation with Dessauer's law: $V = 12.34 \times \frac{\nu}{c} \times 10\text{-}8$ in which V. is the voltage, ν is the frequency of the wave and c is the velocity of light in a vacuum. This gives the minimum voltage. To determine the voltage necessary to sustain the production of x-rays of sufficient hardness in quantity, the result must be multiplied by two from which it can be calculated that from 180 to 200 K. V. are absolutely essential. Third, by the use of multiple points of entry the intensities of various fields can be added together in the depth. Multiple fields, however, are not absolutely essential as will be explained later. Before we can establish homogeneous fields of radiation we must know the amount that rays of the quality we propose to use will be weakened by their passage through the tissues. The amount of this weakening expressed in terms of percentage is known in the literature as the weakening co-efficient, absorption co-efficient, or *u* co-efficient. Since water and the human tissues have practically the same degree of weakening powers this *u* co-efficient may be obtained by measurements in a water phantom. Or, for practical use, since a large water phantom is a bulky and impractical thing to handle, it may be determined by measuring the weakening of the rays after passage through a known amount of aluminum, and the *u* in water may be read from a curve which has been worked out for both water and aluminum. The method of determining this weakening co-efficient is not very difficult when once it has been mastered. The measurements may be made with an electroscope or with an ionto-quantimeter. The latter is rather more practical for ordinary use. Ionization is the disturbance of the electrical balance of an atom. X-rays in common with some other forms of radiant energy have the power of ionization, and air through which x-rays have passed becomes ionized. Air is not a good conductor of electricity but ionized air is an excellent conductor. If,

then we cause x-rays to pass through the air enclosed in a small chamber the air within the chamber becomes ionized and becomes a conductor of electricity. If we extend within the chamber a small rod which can be charged with electricity and which has no other means of discharge except through the air contained within the chamber, and if we add to this a sensitive galvanometer to measure the amount of electricity discharged within a given time, we have an ionto-quantimeter. Using this instrument the u co-efficient is determined as follows: With a known filter, voltage, milliamperage and distance, the average discharge time of the ionto-quantimeter is determined by several readings and this average time we will call I^1. Then, using the same constants the average discharge time is obtained when the x-rays are caused to pass through a known amount of aluminum, say two centimeters. This average time we will call I^2. The u co-efficient is then determined by the calculation of the following formula:

$$u = \frac{\log I^2 - \log I^1}{d^1 \log e}$$

in which *u* represents the weakening co-efficient. I^1 and I^2 as stated above, d represents the thickness in centimeters of the aluminum, and e is the basis of the hyperbolic system of logarithms, 2.7182. The practical use of this u co-efficient will be shown a little later. The extreme importance of using hard x-rays in therapy is seen by consideration of the law which states that the absorption of x-rays in matter diminishes in proportion to the cube of the hardness, that is, if the absorption of rays of a given hardness is a given amount, the absorption of rays of twice that hardness is only one-eighth of that amount.

The law that the intensity of radiation diminishes with the square of the distance is true only when the rays are passing through a vacuum. If any matter be present in the radiated space, other laws, those of scattered radiation supplement the above mentioned law. X-rays proceeding in a direct line from the target of a tube are scattered to a certain degree by every particle of matter which they encounter, only a part of the rays proceeding onward in a straight line. This is a source of great difficulty in x-ray diagnosis, and is the reason, for example, why tuberculosis of a joint always produces a clouded radiograph, that is, because of the added amount of fluid present to scatter the rays. In therapy, however, this is of great importance, for the scattered rays, although different in direction, retain the same degree of hardness, and the same biological activity as the direct rays. With hard rays passing through a light medium, such as water or tissues, the scattering is greater than the absorption and this is the physical law which allows us to apply an effective dose in the depth. Friedrich of Freiburg was the first to measure these scattered rays and more recently Dessauer of Frankfurt University has measured them and has prepared curves or isodoses showing the degrees of absorption and scattering that occurs in water or tissue.

The question now confronting us is how to apply these physical facts to deep therapy and to use them to our advantage. The answer is simple: we must use all the means at our command to decrease absorption and to increase scattering and we must employ these various means simultaneously. By the aid of the measurements which have been made for us by the physicists we can predetermine what will occur with the employment of distance fields, when we vary the size of the field, and when we employ different voltages and different filters. It becomes apparent that little may be hoped for in using multiple small fields for the radiation of any considerable area, as for example the pelvis. By studying these physical laws we learn that the irregular surface of the body is a very serious drawback, as the principal decrease in the intensity of the rays occurs in the first few centimeters of the radiated body. If the body be made to have a plane surface by means of wax, paraffin, or similar material, this sharp decrease of intensity will occur in the material and thereafter it will drop more slowly. If for example we radiate the surface of the body with such an intensity as to give a depth dose at ten centimeters of sixteen per cent, by making the surface of the body a plane with wax, we find that the deep dose has increased to twenty-five per cent. It is therefore better to convert the complicated geometrical figure of the body into a simple figure, such as a cube, so placing the material employed that the diseased area becomes the center of the cube and taking care that it is placed sufficiently deep.

Before we take up the clinical application of these principles and apply them to an actual

case it will be well to define what is meantby various doses. By erythema dose is meant that amount of x-radiation which, in about three days, will produce a gentle reddening of the skin on the anterior abdomen of a middle-aged adult, and which will be followed in about three weeks by a tanning of the skin. By effective dose is meant the amount of radiation which is delivered at the site of the disease under treatment. By sarcoma dose is meant the amount of radiation necessary to cause the disappearance or marked regression of a sarcoma and is about seventy per cent of the erythema dose. By castration dose is meant the amount of radiation which will produce a menopause in an adult woman and which is about thirty-five per cent of the erythema dose. By carcinoma dose is meant the amount of radiation which will cause the disappearance of a carcinomatous nodule, or a regression in its size, which may be appreciated by the senses. The erythema dose and the castration dose are quite constant. but marked individual fluctuations are met with in carcinoma. The cause of this individual variation is unknown. Kroenig and Friederich have noted a distinct variation in the reaction of carcinoma in a cachectic subject, a much larger dose being indicated than a non-cachectic subject.

We may further inquire, before leaving the principles of radiotherapy, how the x-ray acts and what it does to pathological tissues. There seems to be no doubt but that the x-ray has a distinct selective action upon the cells of malignant tumors. Histologically, the changes in the tumor cell consist of vacuolation of the protoplasm; pycnosis of the nuclei, karyolysis, and ultimately complete necrosis accompanied by round cell infiltration which is subsequently changed into dense sclerotic tissue poor in blood vessels. It is not necessary, however, to be bound to the theory of malignant cell destruction in explaining the effects of the x-ray. It is certain that the stimulation of the defensive tissue of the body, that is lympho- and leukocytes, lymphoid tissue, etc., plays an important part in the healing of the disease. It has been established that radiated mouse tumors can be successfully implanted in non-radiated mice while non-radiated tumors cannot be successfully implanted in radiated mice. It would seem, therefore, that radiation stimulates the formation of some defensive antibody, or at least, in some unknown way, raises the resisting powers of the organism against carcinoma. If the defensive tissue is destroyed by over-radiation a few undestroyed malignant cells may regenerate and form a recurrence, the tissues being totally defenseless. It is often possible to demonstrate in microscopic sections of radiated tumors a considerable collection of defensive cells before we can demonstrate a destruction of carcinoma cells. In other cases this is reversed; and these points require further investigation. But even now we can readily see the importance of not disturbing the period of x-ray action by premature repetition of the radiation. The rule in general, although there are exceptional cases, is to radiate, wait three months and radiate, wait six months and radiate, and if any further radiation is indicated to wait from six to nine months more. Holfelder believes that the greater part of late necroses reported in the literature may be traced back to too brief intervals between radiation and not to over-dosage.

TUBERCULIN AS A THERAPEUTIC AGENT IN CERTAIN FORMS OF KERATITIS*

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CHICAGO

Focal activation by means of injections of foreign proteins is a form of treatment that has quite recently been revived in ocular therapeutics. While an occasional brilliant cure is reported, the results on the whole, it would seem, are disappointing. Much more experience must be had, however, before judgment may fairly be passed and the value of this form of medication established.

Tuberculin is one of a number of foreign proteins that has long been used in medicine as a therapeutic agent. While its use has been limited to tuberculous cases, it may activate lesions which are non-tuberculous. It was used in the following cases with these facts in mind. All cases were examined by Dr. John Ritter and the tuberculin administered by him.

Case 1. Mrs. S., aged thirty-five, was first seen on November 18, 1921. She came complaining of inflammation of the eyes that had existed for two years. For eighteen months she has been unable to use her eyes on account of severe photophobia, lacrymation

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and pain. She had had no previous eye trouble. There is no personal or family history of tuberculosis; she had three living healthy children. The lesion of the right eye consisted in a superficial ulcer located just below the pupillary area. An area of scar tissue extended from the limbus to the active portion of the lesion which was traversed by several superficial vessels. The eye ball was injected adjacent to the lesion only and the inflammatory reaction was slight. Lids and conjunctival sac were normal, media clear, fundus normal, vision 20/100. The left eye showed two small shallow ulcers just inside the limbus. Otherwise the eye appeared normal.

The patient was referred to Dr. Slaymaker for examination who reported the urine and blood to be normal, Wassermann negative. Films of the chest made by Mentz and Lang are interpreted by them as "suspicious of a beginning ulcerative process, most likely tubercular in origin, in the third interspace on the right side but this should be checked by clinical observation." There was no clinical evidence that this lesion was active. Abdominal findings were negative. Patient was not well developed and seemed undernourished but is a very active woman. On November 22, 1921, patient was referred to Dr. John Ritter, for a tuberclin test. She was given 1 mill. of O. T. intradermally at 10:00 A. M. Her temperature was 98.8. Twenty-four hours later temperature was 99.2. There was a slight local reaction; the inner zone was 2 c.m. in diameter while the outer zone was 4 c.m. in diameter. In forty-eight hours the temperature was 99, the inner zone measured 2.5 c.m.; the outer zone 5 c.m. in diameter. The local reaction was pronounced positive. That morning the patient began to complain that her eyes felt worse. The photophobia, lacrymation and blepharospasm were increased and the injection at the limbus was more marked while the corneal vessels were plainly visible as if engorged. The patient entered the activation period of a typical diphasic focal reaction. In seventy-two hours the temperature was 99., the outer zone of the local reaction was 6 c.m. in diameter, but the color was beginning to fade. On the fourth day the temperature was normal. The local reaction was receding, but the patient complained of considerable pain and the focal reaction was unchanged. On the fifth, sixth, seventh and eighth days but little change could be noted in the appearance of the eyes and the patient still complained of them. On the ninth day the eyes felt better and the patient entered the positive phase of the focal reaction, improving slowly thereafter each day. On December 8, the eyes showed marked improvement and eighteen days after the injection of the tuberclin, the corneal lesions no longer stained with florescin. Three weeks after the first injection of tuberclin, the second injection was given. The local and general reactions were more severe than before. Forty-eight hours afterwards the temperature was 101. and chiliness and general malaise was experienced. The local reaction measured inner zone 3 c.m.; outer zone 9 c.m. The eyes showed but little reaction, being evidenced by slight photophobia only. On January 1, 1922, the vessels on the cornea of the right eye were no longer visible. The vision was 20/20 in both eyes with correction and the patient could use her eyes with some comfort. On March 31, 1922, she had gained twelve and one-half pounds in weight. The eyes seemed perfectly quiet. The fourth dose of tuberclin was given of 1 mill. with marked local and general reactions but no eye symptoms.

Case 2. Mr. W, aged forty years. Came complaining of inflammation of the left eye for five months, which had not responded to treatment. Examination showed the presence of a torpid ulcer, the active area of which was located about 3 mill. above the lower border of the cornea. Between the ulcer and the limbus was a zone of superficial scar tissue, but no vascularization. There was moderate photophobia and lacrymation, and some injection of the eyeball adjacent to the lesion. Media clear, fundus normal, vision 20/30. The patient had no previous eye trouble and his personal and family history seemed negative as related to the eye lesion. He was referred to Dr. Ritter for examination who reported negative chest findings. On August 28, 1919, he was given .1 mill. of O. T. intradermally by Dr. Ritter. Twenty-four hours later temperature normal and a slight local reaction was present. On August 30, the focal reaction was positive, measuring inner zone 2 c. m., outer zone 3.5 c. m. Temperature normal. That morning he complained that his eye felt worse, the photophobia and lacrymation were much more pronounced. The eye appeared more irritable and distinct increase of circumcorneal injection could be noted. The active phase of the focal reaction continued for five days after which it gradually receded, and on the twelfth day the lesions ceased to stain. All symptoms of irritation disappeared and no return of the trouble has occurred to date.

Case 3. Miss A, aged thirty-five, came on December 7, 1918, complaining of inflammation of the left eye for five months. There has been little change of the symptoms during that time. The photophobia and lacrymation were extreme, but the pain was not severe. There was no history of injury. Examination showed the lids and conjunctival sac to be normal. There was a superficial torpid ulcer encroaching on the pupillary area, slight ciliary injection, media clear, fundus normal, vision 20/50. Her personal and family history seemed negative as related to the ocular lesion. On December 11, the patient was referred to Dr. Ritter who reported chest findings negative, temperature normal. He gave the patient 1 mill. O. T. Three days later the local reaction was, inner zone 3 c. m. and outer zone 8 c. m. in diameter. There was no rise in temperature or other systemic symptoms. On December 13, there began an acute exacerbation of the eye symptoms as evidenced by increased photophobia, lacrymation and injection of the eyeball which existed for six days. Then all symptoms slowly abated, and on December 29, the lesions no longer stained and the eye became quiet. A paracentral scar interfered with

vision some in this case but no further eye symptoms have occurred to date. This patient received several injections of T. B. with local reaction following each but no focal or general reaction.

Case 4. Miss L, aged twenty-five, first seen on September 11, 1919. Complained of inflammation of left eye for a year with recurrent attacks. The lesion consisted of an episcleral node about the size of a split pea, external to the limbus, with a small zone of uninvolved tissue between. Lids and conjunctival sac were normal; media clear and the fundus normal. She was under observation until March 2, 1920, when a superficial ulcer appeared at the upper margin of the cornea. On March 4, the patient was referred to Dr. Ritter who gave her 1 mill. of O. T. A positive local, general, and focal reaction was obtained. The patient responded slowly to treatment but on April 19, 1920, the lesions were healed and normal vision was obtained with correcting lens. During the past week patient returned exhibiting an active tubercular gland on the right side of the neck and showing a phlyctenular-like lesion at the limbus to the temporal side of the left eye.

Case 5. Mr. C, aged thirty-eight, first seen on September 20, 1919, complaining of inflammation of the right eye of eighteen months standing. Examination showed presence of a superficial torpid ulcer in the upper half of the cornea connected with the limbus by the slightly depressed scar occupied by a leash, extending superficially from the limbus. The condition had not responded to treatment. Lids and conjunctival sac were negative. The media were clear, fundus normal. The patient received 1 mill. O. T. on September 22. In forty-eight hours, a local, focal and general reaction were obtained. Eighteen days after the initial dose of tuberclin, the lesion ceased to stain, the corneal vessels gradually disappeared leaving behind a superficial scar. There has been no recurrence to date.

Comment: We have in each of the foregoing cases, adults giving no history of previous eye trouble and exhibiting superficial torpid ulcers of the cornea without complications, the lesions showing little tendency to extend into the substantia propria, but limiting their activity to the superficial layers of the cornea and becoming the seat of superficial vascularization. Evidently, these lesions were endogenous in origin, since there was no history of trauma, and no other local inflammation was present. All gave a positive local reaction to one dose of 1 mill. of O. T.; all gave a diphasic focal reaction to the same. In none was the general reaction marked, except after repetition of the dose. All responded promptly therapeutically. The inference might be that these cases are examples of specificity, and that the lesions were tubercular.

It has been conceded that a local reaction to tuberclin indicates that the subject has at some time been infected by the tubercle bacillus and has developed an immune reaction to the associated protein. A focal reaction, however, has been taken to mean that an active tuberculous process is going on somewhere in the body of the individual. Added to these facts is the clinical observation that these ocular lesions healed promptly following minute doses of tuberclin in the instance above recited, which lends further evidence of specificity. As against this evidence, however, it must be stated that a local reaction to tuberclin is obtained in a large percentage of the dwellers of urban communities.

The focal reaction has a much broader significance, and the theories as to its cause and its therapeutic value are of interest, since foreign protein activation has recently been revived in ocular therapeutics.

According to Petersen many agents may activate an inflammatory lesion,—fatigue, chilling of the body, shock, trauma, metabolic disturbances non-bacterial in origin, foreign proteins, such as milk and typhoid vaccine, tubuculin. In some diseases certain drugs, like the iodids in tuberculosis, specific treatment in syphilis—all these may activate the lesions. In other words, many agents external in nature, may bring on the negative phase of a focal reaction. Whatever may neutralize or alter in amount or nature that substance whose power enables it to hold in abeyance the infective process, allows the temporary exacerbation of the infective process.

Focal activation must have its negative stage followed by a positive stage if therapeutic results are to be obtained. Lesions actively in the negative stage may not be benefited by protein injections.

According to Wells, there are two ways in which a foreign protein may act as a therapeutic agent. First, the injected substance acts as a *common antigen* which causes the production of common antibodies that react also with the antigens of the cause of the disease.

Second, the foreign protein stimulates the *tissues* that form antibodies (presumably the bone marrow), so that they produce antibodies for this antigent and for the disease that has been stimulating the bone marrow previously.

These theories may explain the reputed good results of milk injections in gonorrheal ophthalmia or typhoid protein in irido-cyclitis, but if

these theories be correct, milk should work equally well in irido-cyclitis and typhoid protein in gonorrheal ophthalmia.

In other words a specific reaction may be aroused by non-specific injections, and a non-specific reaction may be aroused by a specific injection.

In cases of non-specific focal activation, as in the use of milk or typhoid vaccine, the therapeutic value would seem, according to Wells' theory, to bear a definite relationship to the amount of systemic reaction obtained. Clinically this seems to be borne out by the facts, for it is well known that the therapeutic results are usually obtained only when the systemic reaction is severe. In specific focal activation therapeutic results may be obtained, although little or no systemic reaction accompanies the use of the foreign protein. This evidence might seem to point definitely in the direction of the lesions above recited being in some way related to tuberculosis.

If these eye lesions be tubercular what may be their pathogenesis?

The tendency of these ulcers to limit themselves to the epiblastic portion of the cornea, their torpid nature, the tendency to superficial vascularization of the scrofulous type, their tendency to start at the limbus, the absence of inflammatory reaction,—all these symptoms indicate that these lesions may be phlyctenular-like in nature. Numerous writers have suggested the similarity of such lesions and tuberculides of the skin.

Ingersheim and Primz in a recent article have again demonstrated the relationship that exists between phlyctenular keratitis and tuberculous glands, the histological similarity of the phlyctenule, and the tuberculide, the frequent co-existence of these two lesions and the tendency of these patients to develop active tuberculosis later in life. Parsons speaks of the cornea as a bad culture medium for the tubercle bacillus, which he states can scarcely ever be found in the lesions, which accounts for the lack of definite knowledge on this subject. Tuberculides have been extensively studied and still no unanimity of opinion seems to exist as to their pathogenesis. In a recent article Gougerot and Larche, after many innoculation experiments in animals, state that they believe that tuberculides are provoked by the effect insitu of metastasizing tubercle bacilli together with their soluble and insoluble products. They manifest themselves only in animals of normal or increased resistance. It is assumed that the microorganisms occur in but scant numbers, undergo lysis as a result of the action of antibodies liberating certain toxins.

It has been noted that superficial lesions of the cornea which break down and form shallow ulcers may follow the use of a diagnostic dose of tuberclin, both in children and adults. The writer had an example of such a case recently in a young man who had recently received bi-weekly large doses of tuberclin for the treatment of tuberculous glands. Both eyes became a seat of superficial ulcers, a phlyctenular-like keratitis, which cleared slowly after stopping the tuberclin.

How may we explain the clinical fact observed that the very remedy that may cure the lesion in one case may, in a previously healthy eye, cause a similar lesion.

The answer may be this: An individual with tuberculosis for instance may, following too large or too frequent a dose of tuberculin, be thrown into so active a negative stage, that there may be set free in the circulation tubercle bacilli which may localize elsewhere in the body and set up new foci of inflammation, be it in the cornea or elsewhere. If, however, the patient is in the positive stage, tuberculin properly given may stimulate those positive factors to greater activity and accomplish good. The same danger exists in any form of specific activation.

These facts suggest the extreme care that should attend the employment of any form of focal activation treatment by means of foreign proteins.

CONCLUSIONS

1. Sluggish superficial ulcers of the cornea occurring in adults not responding to ordinary forms of treatment may respond promptly to small doses of O. T. properly administered.

2. These results may be examples of specificity.

3. If these lesions are tubercular they may be likened to tuberculides of the skin.

4. In a tubercular subject tuberculin improperly administered may cause a superficial type of keratitis in a previously healthy eye.

DISCUSSION

Dr. G. Thomsen von Colditz, Chicago: I was particularly interested in this paper for two reasons: in the first place, because I have used tuberculin extensively in treating the eyes, ears, nose and throat.

and secondly, because tuberculin is condemned so much as a therapeutic agent.

Yesterday a doctor read a paper in which he stated that the patient was not tubercular because he had made the von Pirquet test and it was negative. This was no proof of the patient's not being tubercular. Many physicians do not know what test to make in a given case nor how to interpret the same. The Moro and von Pirquet tests should not be used in adults, as you do not expect a positive reaction in a patient over ten years of age, and should, therefore, be used only in children. The intra-cutaneous test is the most valuable one for all rountine examinations.

As to taking the temperature: I frequently see patients who are running a temperature of 99 to 100 that have been examined by some other physician and told that their temperature was normal. I believe many doctors do not take the time to get the temperature correctly, and that 99 per cent of the nurses think speed is the essential thing in taking temperatures. They do not take into consideration whether the temperature outside is zero degrees and the patient has just come in, or whether the patient has been drinking ice water while waiting in the reception room, but stick a thermometer in the patient's mouth for one-half minute and expect a correct reading in that time. Occasionally, it is necessary to leave the thermometer in the patient's mouth for ten minutes, even though a half-minute thermometer is used. I find, frequently, that the temperature is 99 F. in three minutes, 99.5 F. in five minutes and it may go to 100 F., if the thermometer is left in for ten minutes.

One more thing I would like to mention is the dosage: I read a paper on this subject not long ago. One of the doctors, in his discussion, said that he had used tuberculin only once and that the patient died so he had never used it since. The trouble is that many doctors are not posted on the size of the dosage and do not start with a small enough dose. When tuberculin is used properly in an indicated case, it will give results that cannot be obtained with any other kind of treatment.

TAPEWORM SEGMENTS DISCHARGED THROUGH A FECAL FISTULA FOLLOWING AN OPERATION FOR APPENDICITIS AND CALCULOUS SUPPURATIVE CHOLECYSTITIS

AIME PAUL HEINECK, M. D.
CHICAGO

In the following case of intestinal fistula consecutive to an operation for cholelithiasis, there was noted the repeated passage of tape-worm segments through the fecal fistulous opening.

Mrs. J. H., aged 26 years, an American of Bohemian parentage, was admitted to the Mary Thompson Hospital, Chicago, Sept. 4, 1922. She gave the following history: About four years ago, she began to have attacks of abdominal pain, accompanied at times by severe vomiting. These paroxysms of pain and vomiting have increased in frequency and severity. Towards the close of the attack the pain usually became localized in the right hypochrondriac region. The patient has been married, has had one full term pregnancy and one miscarriage. During her puerperium, she suffered for one month with incontinence of urine.

Head, heart, lungs, extremities, urine and blood showed nothing abnormal. As the abdominal symptoms suggested the existence of appendicitis and cholecystitis, operation was advised and accepted. The patient was operated on Sept. 6. The appendix, abnormally long, showed well-marked evidences of chronic inflammation and therefore was removed. Further exploration revealed a distended, inflamed gall-bladder. It was opened, its purulent contents evacuated and a filbert-sized gall-stone removed. Drainage of the gall-bladder was effected by the insertion of a rubber tube in its cavity. Tube was sutured to the gall-bladder wall. The gall-bladder was not fixed to the abdominal wall; it was surrounded by gauze drains. Closure of wound from above down to, and from below up to, drainage tube.

The post-operative course was smooth until Sept. 10. Then, owing to an undetermined cause, the rubber tube was accidentally torn out of the gall-bladder. I examined the end of the tube and was forced to the conclusion that a small piece of the tube remained in the gall-bladder. Fluoroscopic examination did not show the presence of the supposed retained piece of tube. Still convinced that a portion of the tube had remained in the gall-bladder, I had the patient conveyed to the operating-room, anesthetized, and succeeded in locating and extracting the missing part of the tube. During the following days, the patient showed much restlessness, much abdominal distension. On Sept. 15, a profuse purulent discharge, having a marked fecal odor, appeared in the wound. On Sept. 16 undigested food escaped through the operative wound and tape-worm segments were passed per rectum. On the following day, the dressings were saturated with fecal matter and contained a few tape-worm segments. An intestinal fistula was diagnosed.

As part of the ingested food escaped through the wound, oral feeding was supplemented by nutrient enemas. On Sept. 19, and for several days following, it was noted that the cleansing enemas were partly expelled through the fecal fistula; many tape-worm segments also escaped through the fistulous opening.

The institution of vermifuge medication resulted in the expulsion of two complete tape-worms per rectum. The further post-operative course was uneventful; the biliary fistula being closed and the fecal fistula being reduced to a pin-head sized opening, patient was discharged. The patient made a good recovery and is now in excellent health.

The etiological mechanism in this case appears to be as follows: The suppurative inflammation

of the gall-bladder led to a pericholecystic pus collection; the latter involving the transverse colon near the hepatic flexure ulcerated and perforated the colonic wall and thus led to the formation of a fistula through which tapeworm segments, undigested food and other intestinal contents escaped externally.

The forcible tearing out of the drainage-tube, the retention of a portion of this tube in the gall-bladder, the surgical manipulations incident to, the locating and extraction of the retained portion of the tube, the empyema of the gall-bladder and the pericholecystic inflammation were all contributing factors to the formation of the fistula. It is possible that the intestinal worms may have altered the bowel wall and lessened its resistance to infection.

There are recorded in the medical literature a limited number of cases in which worms (ascarides and lumbricoides) have perforated the intestinal wall and set up a localized peritonitis or a surface abscess. In a few cases, intestinal fistulae opening externally were thus produced. Allaman (1896), Bensley (1897), Ferris (1902), Solieri (1902) have reported cases of intestinal perforation by worms. In the recent literature Gilberti[8] reports such a case.

Bonnet (1896), Sikora (1904) and Villemin (1904) reported intestinal fistulae due to worms. In a cursory search of the literature, I have not however been able to find a single case of a verminous fistula following a gall-bladder or other abdominal operation. I have found only a few cases of intestinal perforation by tapeworms (Taenia) in the human subject, viz., the cases reported by Dunlap[5], Nauwerck[6] and Stieda[7].

Dell[4] reported tapeworm intestinal perforation in a dog, the finding being made at autopsy. He quotes a case, also in a dog, by Cadaec of tapeworm perforation of the duodenum and other cases of intestinal perforation by Taenia in animals reported by Menin and Lahogue.

In my own case, I believe that the intestinal perforation had an external traumatic and suppurative origin; but I wish to call attention to the fact that such perforations may be hastened by diseased conditions of the intestinal wall due to worms and that intestinal parasites may be expelled in part or wholly through such a fistulous opening.

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Book Reviews

THE ANATOMY OF THE HUMAN EYE AND ORBIT. By William W. Goldnamer, M. D. 240 pages. 6 Roentgen photograms. 51 black and white illustrations. 8 pages of colored plates; 10 pages of tables measurement charts. Chicago, Illinois. The Professional Press. 1923. Price, $7.00.

This book will be of interest to the casual reader as well as the close student. The author has so condensed the facts that the reader wastes the least possible time in getting the value without having to compare the many diverse opinions that may be cited in the many instances which diverse opinions are paramount to an argument in each case. The anatomy of the eye is today regarded as a major division of the science, meriting the most painstaking and exhaustive treatment in all of its details.

THE SUCCESSFUL PHYSICIAN. By Verlin C. Thomas, M. D. Visiting Physician to Franklin Hospital, San Francisco. Octavo of 303 pages. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, $4.00.

The knowledge of medicine is first essential in the practice of the medical profession. But it is not all, and to fill the gap between theory and practice this book has been written.

EXERCISE IN EDUCATION AND MEDICINE. By R. Tait McKenzie, M. D., LL. D., Professor of physical Education and Physical Therapy and Director of the Department of Physical Education, University of Pennsylvania. Octavo of 601 pages, with 445 illustrations. Philadelphia and London: W. B. Saunders Company. Cloth, $5.00 net.

In this edition the author has brought the subject down to date. He has inserted the experiences gained as physical training officer in the British Army at Aldershot, as medical officer of convalescent camp of 5,000 men, and as inspector of physical therapy in such camps and hospitals throughout England, Canada and the United States.

TRUE GOLD OF TENNESSEE. By Ernest Hugh Fitzpatrick, M. D. Chicago, Clarke-McElroy Publishing Company, 1922. Price, $2.00.

This romance is far above the conventional love story though replete with charming affairs du coeur. Set in a small village of Tennessee among the cultured but fairly primitive descendents of the early English and Scottish settlers the story unfolds and

involves an English baronet, a French gambler and numerous European and American characters. From the idyllic quiet of the mountain village with its peculiar Southern types—the old fashioned lawyer, Silas Thompson, with his "parties of the first part and parties of the second part"—the story takes one to London, Paris, through a fierce campaign against the Hill Tribes of Northern India and an exploring expedition through Tibet.

Exploits that win the Victoria Cross vie with love scenes to beguile the reader.

That a physician, Dr. Vernon, is one of the leading characters, adds not a little to the fascination of the story for the professional man. The culmination of the plot of the French gambler to blackmail Sir Reginald Streetfield by his hypnotic control over his wife—twin sister of Lady Streetfield—is a study in the psychology of hypnotism well worthy of careful reading by medical men. Few indeed are the men who have acquired more than the rudiments of this so-called science which promises so much but for most of us remains an *ignis fatuus.*

Sexual Impotence—Robinson. A practical treatise on the causes, symptoms and treatment of sexual impotence and other sexual disorders in men and women. By William J. Robison, M. D. Eleventh edition. Revised and enlarged. Critic and Guide Company, New York. 1923. Price, $5.00.

In this edition the author has taken advantage of the opportunity to subject the entire book to a thorough revision and has added a number of chapters dealing with gland transplantation, endicronology, the Steinach operation and containing additional case reports, comments and explanations.

Nutrition of Mother and Child. By C. Ulysses Moore, M.D. Including menus and recipes. By Myrtle Josephine Ferguson. With 27 illustrations. Philadelphia and London. J. P. Lippincott Company. Price, $2.00.

This volume presents the facts of nutrition which have been accepted by schools of accredited standing everywhere. Nothing is included which has not been tested and proven of practical value in personal experience. It is so arranged that it may be employed by nurses and social workers for instructions of mothers in the home.

Clinical Laboratory Methods. By Russell Landram Haden, M. D. With 69 illustrations and 5 color plates. St. Louis. C. V. Mosby Company, 1923. Price, $3.75.

This volume is presented to physicians and laboratory workers as a series of procedures which have been thoroughly tried out and found to give accurate results. It represents the outgrowth of note books used in the development and standardization of the laboratory of a general hospital. The book is in no sense a text book. However, the normal figures for the method are included in each quantitative test and occasionally types of abnormal findings are given.

Insanity and the Criminal Law. By William A. White, M. D. New York. The Macmillan Company. 1923. Price, $2.50.

In this work the author sets forth his opinion that "the time has arrived for the law to take some cognizance of what has been accomplished" through the practical applications of modern psychiatry to the problems of human behavior and adjustment.

Society Proceedings

COOK COUNTY

CHICAGO MEDICAL SOCIETY

Regular Meeting, February 7, 1923

SYMPOSIUM ON ALCOHOLISM

1. The Effect of Prohibition on the Working Efficiency. Trauma and Alcoholism.—Harry E. Mock.
2. Does the Habitual Use of Alcohol Influence the Prognosis of Pneumonia?—Jos. A. Capps and Geo. H. Coleman.
3. Alcohol—Death and Destruction.—Judge Wm. N. Gemmill, Municipal Court of Chicago.
4. Statistical and Clinical Observations on Poisoning by Alcoholic (?) Beverages, 1917-1922.—Francis J. Gerty, Superintendent Psychopathic Hospital.

Discussion—Clarence A. Neymann, Karl Meyer, Chas. F. Read and H. Douglas Singer.

Joint Meeting of the Chicago Medical Society, the Chicago Neurological Society and the Illinois Society for Mental Hygiene, February 14, 1923

1. Opening Remarks.—Frank Billings.
2. Historical Development of the Care of Nervous and Mental Diseases in Illinois.—Harold N. Moyer.
3. The Present Situation Relative to the Care of Nervous and Mental Diseases in Illinois.—Lewis J. Pollock.
4. Outstanding Needs in Illinois from the Medical, Social, Educational and Investigative Points of View.—H. Douglas Singer.

The discussion led by Archibald Church and Edward H. Ochsner.

Regular Meeting, February 21, 1923

Prevention of Diphtheria.—B. Schick, Vienna, Austria.

Discussion—George H. Weaver, Herman N. Bundesen, Isaac Abt, J. Warren VanDerslice and C. A. Earle.

Regular Meeting, February 28, 1923

1. Basis of Diagnosis in Abdominal Surgical Lesions.—Allen B. Kanavel.

Discussion—Arthur F. Byfield.

2. Specific Hypersensitiveness as a Common Cause of Illness.—W. W. Duke, Kansas City, Mo.

Discussion—Charles Spencer Williamson and Milton M. Portis.

THE CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY

DISCUSSION

(Continued from February issue)

Dr. Edwin McGinnis said he was very glad to hear others talk of ventilation instead of exenteration and said he had seen two cases of exenteration recently that had been operated five or six years ago. One of the patients during every cold spell world have a Sluder syndrome—headache, pain in the side of the neck, tenderness back of the ear, and inability to work. That this was due to the fact that the cold air had free access to tbe region of the sphenoganglia was proved by the absence of symptoms when that side of the nose was plugged witb cotton. She had no trouble in the summer in the place where the ethmoid used to be.

Dr. McGinnis thought the operation under discussion was very useful in the class of cases where there is no pathology in the ethmoid but much trouble bacteriologically and that in many cases the ventilation was of much benefit to the patient. He believed Dr. Andrews bad missed one point; namely, that it is impossible to get at the ethmoid in some cases unless one takes out a part of the septum high up, particularly with a broad deflection of the septum.

He had used no vaccines in his cases, and believed one should strive to get a good, positive result with vaccines and nothing else.

Dr. Frank Brawley thought everyone was indebted to Dr. Andrews for stressing the point of conserving the turbinates, and supported Dr. McGinnis' remarks concerning the Sluder syndrome. Dr. Brawley believed the profession now realized more thoroughly what the middle turbinate was placed there for, and were thus avoiding unpleasant complications.

Dr. H. W. Loeb thought the keynote was expressed in the last sentence in the paper—"We can never put back what bas been removed but can always remove more." He had not been able to save the middle turbinate quite so often as had been brought out by the speakers, nor did he think this was necessary. Dr. Loeb believed anything that would make operators more respectful of the normal tissues about the nose was of value.

Dr. A. H. Andrews (closing) said he wanted those present to remember tbat whenever the middle turbinate and ethmoids were removed that the nose was forever crippled. Whenever an air filled cavity, such as the nasal accessory sinus, becomes closed off from the outer atmosphere the cavity always becomes diseased. In these cavities the object sought is ventilation and not excision or drainage.

Dr. Andrews thought it was sometimes necessary to operate on the septum in order to get at the turbinate, but this was not included in the scope of the paper. When ventilation is secured for the ordinary ethmoid cells the supraorbital cells are also provided with both ventilation and drainage.

Dr. W. E. Grove, Milwaukee, Wisconsin, read a thesis entitled "Mishaps in the Puncture and Irrigation of the Maxillary Sinus."

ABSTRACT

In any diagnostic measures which we employ, the patient has the right to ask of us, nay more, to demand of us, that it shall not be fraught with any danger to himself.

And if, furthermore, we use this same measure as a therapeutic procedure, the injunction to make it safe to the patient is no less binding upon us. Is the puncture and irrigation of the maxillary sinus as now practiced by the majority of rhinologists perfectly safe and harmless to the patient? If it is not, in what does the lack of safety consist and what can we do to remedy the situation?

After giving a historical resume and a very comprehensive review of the literature of this subject, the author said he had reached the following conclusions:

1. That we have in the puncture and irrigation of the maxillary sinus a very valuable diagnostic and at times also a valuable therapeutic measure.

2. That it makes very little difference whether you irrigate from the middle or the inferior meatus but that irrigation from the middle meatus is probably easier on the patient.

3. That the procedure as formerly employed is not entirely without danger.

4. That while the anaesthetic used and the question of vague irritation cannot be entirely eliminated, the main danger consists in the air inflation and not in the act of puncture or the irrigation.

5. That we can make the procedure comparatively safe, at least eliminate the more serious complications, if we avoid the use of air either before or after irrigating.

DISCUSSION

Dr. A. H. Andrews emphasized two points: After opening the antrum through the canine fossa he had pushed the trocar through the inferior nasal antral wall wbile observing the result through the canine fossa. In a large proportion of cases the mucous membrane would be pushed ahead of the trocar. If this happens in the living, when the trocar is removable and compressed air turned into the cannula, if the patient does not die he sbould be expected to.

One point which he did not hear mentioned by the essayist was a means of exit for air or fluid. Dr. Andrews' impression was that if the operator is careful to see that the trocar and cannula are in the antrum instead of between the mucous membrane and the bone, and that there is abundant means of exit for whatever is used, wbether air or water, such unfortunate results as had been reported would be entirely avoided.

Dr. Joseph C. Beck said that he never inflated the antra and had always felt it was a very dangerous procedure. Instead of washing much be uses the negative suction after puncturing the antrum. In this way he obtains all the desired diagnostic and therapeutic results, and agreed that there was no harm in a little medication in the antrum.

The point made by Dr. Andrews he considered very important. If he had to puncture through the inferior meatus he never neglected to see that the middle meatus was open.

Dr. Beck wondered if air could not be used for diagnosis in the laryngeal field as surgeons were using it for the diagnosis of lesions about the joints and kidneys. In a recent discussion on this subject it had been stated that tbey were afraid to get the air into the soft tissues, not necessarily into the blood vessels. In the case of air in the orbit mentioned by Dr. Grove, which affected the optic nerve, this could be explained by getting the air around the periosteum, around the orbit and locking it into the optic foramen, causing blocking and secondary reaction, or infection, around the nerve. He thought this accident was quite common.

Dr. H. W. Loeb congratulated tbe Society on having such a well studied paper, but as he does not puncture the antra he felt that he could not add anything to it.

Dr. Frank Brawley reported two cases of syncope, possibly produced in the way Dr. Grove reported. Neither one occurred following puncture, but both in cases where numerous irrigations has been made. One was in an antrum and one in a frontal sinus and both occurred following insufflation with air. He had never had one follow a sinus puncture, probably because ot his tecbnic. Neither of these cases was serious; there was little change in the pulse rate, nothing but the syncope and sterterous breathing. One of the patients remained semi-conscious for about forty-eight hours. The fundi were examined several times but nothing was found,

despite the fact that she complained of loss of vision during the first thirty minutes.

Dr. Alfred Lewy stated that in the large majority of cases where it was desired to investigate or treat the antrum, it was not necessary to subject the patient to the trauma of puncture, as it is possible to enter the antrum through the natural opening in over 80 per cent. of cases. He had performed this little treatment about 2,000 times and only once had he entered the orbit, causing a transient swelling of the eyelids. He used the little cannula which is credited to Dr. Pierce, but which Dr. Pierce ascribes to Sir Morrell Mackenzie. It has two openings on the side with a smooth, blunt end, and under proper manipulation seems to find its way into the natural ostium, so that in a majority of cases there is not even a drop of blood drawn by the procedure.

Dr. John A. Cavanaugh reported two mishaps, one in an antrum case and one in a sphenoid. The antrum was punctured in the inferior meatus, by an assistant, and compressed air used to blow out the cavity. The patient became pale, complained of inability to breathe freely, and claimed that it was ten days before he could breathe properly again, but he recovered and progressed nicely.

In the sphenoid case a cannula was passed through the natural opening and air introduced very gently. The patient fell to the floor and became syanotic. Dr. Cavanaugh could not account for this symptom until he opened the mouth and found a plate which had fallen back and obstructed the respiratory passage. Upon removal of the plate the patient revived.

Dr. Robert Sonnenschein corrobated what Dr. Lewy said and stated that for five or six years he had very rarely punctured an antrum. He had also had the little procedure performed on himself several hundreds of times. In most instances if a little cocain is placed in the middle meatus the operation is practically painless and he had never experienced an unfortunate effect.

Dr. Sonnenschein stated that he had had the pleasure of reading Dr. Grove's paper in its entirety and that it was a most thorough and excellent piece of work. He thought the Society should be congratulated in having it presented.

Dr. W. E. Grove (closing) agreed that he had failed to emphasize the point brought out by Dr. Andrews regarding the removal of polyps from the middle meatus and having this patent.

If he had read his paper in full the point of suppuration, spoken of by Dr. Beck, would have been taken up. The blocking at the optic foramen was one of the first things that had occurred to him, but he could not figure how the air could strip all the mucous membrane up and account for the blocking.

He reported the case of a patient who was struck in the upper lid by a skate which penetrated the lid and evidently gouged out the eye. Two days later he could get this open and the eye-ground presented a remarkable picture; the veins were absolutely black, the retina was quite pale and in the course of the last two weeks the disc had become atrophic. Dr. Grove thought a certain amount of hemorrhage had been produced post-bulbar which shut off the return circulation long enough to cause a devitalization optic atrophy.

Kümmel has reported two cases where he inflated the frontal sinus, and Moritz Schmidt has also reported inflating the frontal sinus with air.

The points brought out by Dr. Lewy were covered in the part of the paper which he had not taken time to read. He called attention to the fact that sounding the normal opening was often the posterior fontanel of the middle meatus. The bony lamella is so thin that one can push in with a blunt cannula and often, instead of sounding the opening, one is making an actual puncture in the fontanel.

Dr. John Alfred Rundstrom presented an inaugural thesis entitled: "The Pathological-Anatomical Difference Between the Fetid and the Nonfetid Ozena."

ABSTRACT

Dr. Rundstrom had been interested in this subject for many years and had made bacteriological-anatomical researches and gathered clinical material, and mentioned the following theories as to the nature of the disorder:

1. That ozena is a primary, genuine atrophy of the nasal mucous membrane due to an unknown cause.
2. That it is due to diseased sinuses.
3. That it is due to a congenital lack of or to a rudimentary development of the turbinate bones.
4. That it is due to a specific microorganism.
5. That it is caused by degenerative processes in the mucous membrane, particularly the transformation of the cylinder epithelium into pavement epithelium.
6. That it is a hereditary, syphilitic process.

His observations had led him to believe that one must look for some pathological changes in the sinuses as the cause of the ozena. There is a surface secretion in addition to the sinus secretion and as this secretion dries and forms crusts in the nasal cavity it produces an inflammation and mechanical irritation which keeps up the disorder. If the crusts are carefully removed each day the secretion in the outer nasal cavity diminishes, and the fetor ceases as the healing process goes on.

One finds a perfect correspondence between the clinical symptoms and the pathological-anatomical picture. In cases of intense fetor the cario-necrotic process involves all the sinuses; in cases where the fetor is slight the cario-necrotic process is limited to one sinus. In other cases where an abundant secretion exists which form crusts in both nasal cavities, but there is no fetor, all the sinuses are diseased but without the cario-necrotic process. In the cases where the atrophy is of high degree but the other symptoms are lacking there is a healed ozena. In some cases there is hypertrophy, fetor, crusts and increased width of the meatus, which means an ozena of recent date. The anatomical findings always correspond to the degree of clinical symptoms.

DISCUSSION

Dr. S. M. Morwitz said that last year he spent six months in the clinic of Prof. Hajek at Vienna, where Dozent Hofer, next in rank to the Professor, obtained his title through his researches on ozena, and he felt convinced that the origin of ozena is entirely bacteriologic and its treatment seriological by virtue of an active immunity produced. He had prepared a vaccine called "Vakzine Coccobazillus Foetidus Ozenae," and gives intramuscular injections weekly, beginning with 50,000,000 in 1 c.c. and increasing to 500,000,000 in 1 c.c. Twenty to thirty of these injections are given. This treatment is of value only in the so-called early type cases, although sometimes the odor will disappear in the advanced type, but the patient must be in good physical condition to receive this type of treatment. The results from this treatment were very encouraging. Definite atrophy of the mucous membrane of the turbinates had been produced in rabbits by this treatment. In Berlin Prof. Halle employs surgical measures, displacing the lateral nasal wall toward the septum, and is enthusiastic about the results thus obtained.

Dr. Robert Sonnenschein asked if this bacillus was not the same one that was described several years ago by Perez of Buenos Ayres. If so, it was nothing new.

Dr. W. E. Grove was interested in the fact that ozena is

more prevalent in certain parts of the country. In his work with Gerber in Koenigsberg they found that in some localities there were many cases, while in other places there were none at all.

Dr. J. Holinger thought it would be very hard to find one satisfactory explanation for all cases of ozena. Against all bacteriologic theories are the one-sided cases of this disorder. A combination of causes is most plausible. He believed the combination of a too wide nose with metaplasia of the epithelium of the middle turbinal may account for most cases. The metaplasia may often be produced by suppuration from the sinuses persisting for years during childhood, through living in unsanitary surroundings.

Dr. H. L. Pollock said that in 1911 he read a paper and gave the various theories of ozena, some of which the essayist did not mention. He also called attention to the fact that the majority of cases occur in girls, beginning at about the age of puberty. He had found changes in the turbinate such as occur in osteomalacia and other changes, which led him to believe that the whole underlying cause was in some way connected with the endocrin glands. Many cases treated with the various extracts of the endocrin glands had improved greatly for a time and then reverted to the state in which he first saw them, perhaps because he did not know which of the glands to give and in what dosage. He believed the fetor of the ozena is probably caused by the Abel's bacillus but that there was nothing more than the saprophyte there.

(*To be continued in April issue*)

Personals

Dr. T. Melville Hardie is a member of the Chicago Curling Club, which defeated the Royal Caledonian Curling Club of Scotland at the annual games held in Chicago, February 16.

Dr. Guy G. Kilgour, Malden, has accepted the appointment of assistant superintendent of the State Hospital for the Insane at Anna.

Dr A. J. Carlson addressed the members of the Peoria City Medical Society February 6.

Dr. Peter S. Winner, assistant superintendent of the Peoria State Hospital, has been appointed superintendent of the Municipal Tuberculosis Sanatorium, Chicago, to succeed Dr. Allen J. Hruby.

Dr. Peter Bassoe, professor of neurology at Rush Medical College, gave a lecture on "Modern Treatment of Epilepsy" before the Elkhart County Medical Society at Goshen, February 1.

Dr. B. Barker Beeson, Chicago, has been appointed associate professor and acting director of the division of dermatology and syphilology at Loyola University School of Medicine, Chicago; also dermatologist to the Mercy Hospital.

Dr. Hiram H. Bay, for the last three years tuberculosis consultant for the U. S. Veterans' Bureau, Chicago, has resigned to accept the position of medical director of the Chicago Tuberculosis Institute.

A dinner was given in honor of Professor Schick of Vienna, Austria, February 21, at the Hamilton Club. Following the dinner, Professor Schick gave an address before the Chicago Medical Society on the "Prevention of Diphtheria."

Dr. Emmet Keating, secretary of the Physicians' Fellowship Club, gave an address at Bloomington, Ill., Tuesday evening, February 13, 1923, to the Physicians' Fellowship Club of that city.

Drs. A. J. Ochsner and Henry Schmitz of Chicago are not members of the physicians party making the South American trip, as stated in the February JOURNAL.

News Notes

—Excavation work has been started for the $50,000 addition to Jefferson Park Hospital, Chicago.

—A new 150-bed hospital will be erected by Dr. B. L. Ramsay of the Austin Hospital Association, at Central avenue and Flournoy street, Austin.

—Plans have been drawn for a $350,000 addition to the Washington Boulevard Hospital.

—A hospital, to be known as the Roseland Community Hospital, will be erected in that city at a cost of about $500,000.

—It is reported that Dr. Carl W. Kimery, Sullivan, was sentenced to thirty days in jail by Judge Grider, February 1, when he pleaded guilty to violation of the Volstead Act.

—Dr. Henry Lee Green, Quincy, convicted January 21, 1922, on a charge of violating the Harrison Narcotic Law, was fined $1,000 and costs February 5, at Springfield, by Judge Fitz-Henry, according to reports.

—A revised edition of rules and regulations relative to the reporting and handling of influenza cases has been published by, and are available for distribution from, the state department of public health, Springfield.

—The American Hospital at Johnston City was formally opened to the public recently. Dr. Fred Greenbaum, West Frankfort, has been appointed superintendent.

—A verdict of guilty was returned by the jury, January 18, in the case of Dr. John G. Massie of Belleville, accused of operating a confidence game in connection with the sale of stock in the defunct Ilgahoma Petroleum & Gasoline Company.

—At a meeting of the institute of Medicine,

February 9, Dr. F. G. Banting, Toronto, read a paper on "The Value of Insulin in the Treatment of Diabetes"; Prof. J. J. R. McLeod, Toronto, spoke on "The Physiological Functions of Insulin."

—A report has just been issued covering the first fifty years of service of the House of Correction. A special section is devoted to the medical department. In this section of the report, methods of handling alcoholics, drug addicts and defectives are given special attention.

—At a meeting of orthopedic surgeons at the University Club, Chicago, February 2, the Chicago Orthopedic Club was organized. Dr. John Ridlon was elected president; Dr. Edwin W. Ryerson, vice-president, and Dr. Henry B. Thomas, secretary-treasurer. Meetings are to be held monthly.

—Dr. Edith B. Lowry of the U. S. Public Health Service, has been assigned to direct a demonstration in the medical inspection of schoolchildren at Elgin. The demonstration was undertaken at the request of the local superintendent of public schools. The local board of health and the state department of public health are cooperating in the project.

—Another attempt will be made to induce the Illinois Legislature to enact the bill providing for the establishment of a farm colony for criminal defectives, according to statements by Judge Trude of the morals court and Dr. William J. Hickson of the Chicago Psychopathic Laboratory. It is estimated that the experiment will cost about $1,000,000, but that the reduction in crime and court expenses will offset the expenditure.

—Dr. W. N. Peck of the Tri-State Medical Society has been advised that the medical department of the U. S. Army will be host at a luncheon at Washington, D. C., to about 250 members of the Tri-State Society, who will compose the "clinic train" party that will visit the larger Eastern cities this spring for the purpose of attending clinics. A clinic will be given at the Walter Reed General Hospital for the party.

—Nearly 90,000 people passed through the receiving wards of Cook County Hospital during 1922. About 37,000 were admitted as patients, 21,000 were treated at the dispensary and about 28,000 were rejected, according to the annual report. Clinics for patients with heart disease were established during the year. The charity ward gave out 200,000 garments to needy persons, a service which cost the county nothing.

—At a recent meeting of the Chicago Medical Society, Dr. Martin M. Ritter was elected chairman of a propaganda committee organized for the purpose of arranging for the care and treatment of drug addicts at little or no cost to the sufferers. Need for their care in other than penal institutions was brought to the attention of the council of the society. Other members of the propaganda committee are: Drs. George C. Amerson, William S. Bougher, John William Davis, Robert Emmet Keating, Paul E. Kelly and Clarence L. Wheaton.

—The Illinois Society for Mental Hygiene held a conference in Chicago February 14-16, in conjunction with the Chicago Medical Society and the Chicago Neurological Society. Among the speakers were Judge Victor F. Arnold of the juvenile court of Chicago; Drs. Hugh N. MacKechnie, president of the Chicago Medical Society; Arnold L. Jacoby, director of the Municipal Psychopathic Clinic, recorders court, Detroit; Archibald Church, professor of neurology, Northwestern University Medical School; Bird Baldwin, Ph.D., director of the Child Research Station at the University of Iowa, and Frank Billings, president of the Illinois Society for Mental Hygiene.

—In an effort to prevent the recurrence of typhoid fever epidemics traced to carriers and, at the same time avoid the necessity and hardship of quarantining those demonstrated to be carriers, the state department of public health has drawn up a contract which all known carriers of typhoid fever will be required to sign and comply with in order to escape continuous quarantine. The contract simply constitutes a signed agreement to the effect that the carrier will practice the most rigid personal hygiene rules and will not engage in occupations that make the handling or preparation of food necessary. It further requires a semi-annual report from the carrier to the department and a notice to the local health office of any contemplated change in address. There are about thirty known typhoid fever carriers in the state at present, and eight of these have signed the contract. The others will be given an opportunity to sign as soon as is practical.

—The DuPage County Tuberculosis Society held its first clinic at the Union Church in Hins-

dale, February 7, under the auspices of the Hinsdale Women's Club.

—Judge Stransky in Lee County circuit court refused to issue an injunction against the health and school authorities of Dixon in the matter of excluding children from school unless vaccinated in the presence of an epidemic.

—The Iowa and Illinois Central District Medical Society announce an interesting program for the mid-winter meeting, February 15, in Davenport.

—The Chicago Department of Health announces the lowest death-rate on record last year, with the exception of the previous year; 11.18 in 1922, and 11.08 in 1921.

—Request for an appropriation of $6,000 for a full-time health commissioner for Peoria has been made for the current year. Last year the part-time commissioner received $1,200.

Deaths

William M. Craig, Petersburg, Ill.; Missouri Medical College, St. Louis, 1887; member of the Illinois State Medical Society; aged 65; died, January 19, from pneumonia and heart disease.

William E. Duncan, Chicago; Rush Medical College, Chicago. 1881; aged 70; died, January 29, from pneumonia.

Charles C. Eldred, Joliet, Ill.; Jefferson Medical College of Philadelphia, 1875; a Fellow A. M. A.; aged 73; died, February 4, following a long illness.

Sarah Helen Fitzbutler, Chicago; Louisville National Medical College, Louisville, Ky., 1892; aged 60; died, January 12.

Edwin H. Hayes, Chicago; Hahnemann Medical College and Hospital of Chicago, 1884; aged 72; died, February 11, from pneumonia.

John R. Hoffman, Wilmette, Ill.; Northwestern University Medical School, 1891; a Fellow A. M. A.; member of the American Academy of Ophthalmology and Ot-Laryngology and vice-president of the Chicago Ophthalmological Society; secretary and professor of ophthalmology at the Chicago Eye, Ear, Nose and Throat College; for twenty-five years superintendent of the Chicago Eye, Ear, Nose and Throat Hospital; aged 57; died, February 19, of thrombosis.

Harrison Pettit Huntsinger, Pinckneyville, Ill.; Rush Medical College, Chicago, 1879; Civil War veteran; aged 80; died, January 22, from senility.

Isabella Hursen, Chicago; Chicago Physio-Medical College, 1902; a Fellow A. M. A.; formerly adjunct professor of medicine at her alma mater; aged 55; died, February 11, from heart disease, following an attack of influenza.

Frederick Raymond Kitterman, Tiskilwa, Ill.; Medical Department of the University of Illinois, Chicago, 1902; aged 47; died recently from pulmonary thrombosis.

Edward Philip Koch, Chicago; Missouri Medical College, St. Louis, 1881; aged 68; died, January 25, from heart disease and chronic nephritis.

Myron Edwin Lane, Chicago; College of Physicians and Surgeons, Chicago, 1887; formerly on the staff of St. Joseph's Hospital, New York City; member of staff of the Chicago Municipal Tuberculosis Sanitarium; aged 60; died, January 27, from heart disease.

William S. Martin, Tuscola, Ill.; Bellevue Hospital Medical College, New York, 1877; member of the Illinois State Medical Society; aged 85; died, February 5, from senility.

George Allen McCormick, Hennepin, Ill.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1883; aged 76; died, January 5, from angina pectoris.

Carlos Montezuma, Chicago; Chicago Medical College (Northwestern University Medical School), 1889; a Fellow A. M. A.; instructor of clinical medicine at his alma mater; died, January 31, on the McDowell Indian Reservation, Ariz., from pulmonary tuberculosis. Dr. Montezuma was born in Arizona in 1867 of Apache Indian parents. He served at various Indian agencies as surgeon for the Interior Department from 1889-1896. He was formerly instructor in stomach and intestinal disease at the Post-Graduate School, and instructor in medicine at the College of Physicians and Surgeons, Chicago. He was editor of the Indian magazine *Wassaja,* and author of "The Indian of Today and of Tomorrow."

Charles M. Morrill, Havana, Ill.; Eclectic Medical Institute, Cincinnati, 1876; a Fellow A. M. A.; aged 71; died, January 19, from the effects of burns received when his clothes ignited from sparks from his pipe.

Frederick D. Porter, Chicago; Detroit Medical College, Detroit, 1877; member of the Illinois State Medical Society; aged 72; died, February 4, from heart disease.

John H. Rice, Quincy, Ill.; Eclectic Medical Institute, Cincinnati, 1878; Rush Medical College, Chicago, 1898; member of the Illinois State Medical Society; aged 66; died, January 31, following a long illness.

George Banker Schwachtgen, Aurora, Ill.; Rush Medical College, Chicago, 1910; formerly city health commissioner; proprietor of the Lincoln Hospital; aged 38; died, January 16, from injuries received when his automobile was struck by a train.

William Oliver Skinner, Griggsville, Ill.; University of Pennsylvania School of Medicine, Philadelphia, 1874; member of the Illinois State Medical Society; aged 74; died, January 26.

John Hardin Stewart, Sr., Exeter, Ill.; Rush Medical College, Chicago, 1870; died, February 2, from cerebral hemorrhage.

Langley St. A. Whitley, Godfrey, Ill.; St. Louis Medical College, St. Louis, 1884; a Fellow A. M. A.; was given the degree of LL.D. from the University of Virginia, Richmond; formerly member of the state legislature; aged 59; died, January 15, following an operation for carcinoma of the stomach.

ILLINOIS MEDICAL JOURNAL

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State Society will pay no bills for legal services except those contracted by the Committee. Notify the Chairman at once. Do not employ attorneys.

Send original articles and all communications relating to advertisements to Dr. Charles J. Whalen, Editor, 6221 Kenmore Avenue, Chicago.

Membership correspondence to Dr. Wm. D. Chapman, Silvis, Ill.

Society proceedings and news items and changes in the mailing list to Dr. Henry G. Ohls, Managing Editor, 927 Lawrence Avenue, Chicago.

Contributors will submit all copy for publication typewritten on standard size paper and double spaced. Copy not complying with this rule will be returned, if convenient.

Subscription price of this Journal to persons not members of the Illinois State Medical Society is $3.00 per year, in advance, postage prepaid, for the United States, Cuba, Porto Rico, Philippine Islands, Hawaiian Islands and Mexico. $3.50 per year for all foreign countries included in the postal union. Canada, $3.25. Single current copies, 35 cents. Back numbers, after three months from date of publication, 50 cents.

Editorial

LET YOUR NEIGHBOR READ IT

Within a few days every physician in the State will receive a copy of a pamphlet sent out by the Legislative Committee of the State Society or from the Public Relations Committee of the Chicago Medical Society.

This pamphlet gives reasons why we should not co-operate with the Sheppard-Towner Act; *how thinking men view the "Maternity Act," "State Subsidies," and "Similar Legislation."*

Doctor, when you have read the pamphlet pass it on to some influential club woman in your neighborhood; in this way you will help bring the women of the country to a realization of the dangers of the Sheppard-Towner and similar un-American social and economic legislation.

BANQUET OF DOCTORS, DENTISTS AND DRUGGISTS

April 23 there will be held at the Morrison Hotel, Chicago, a get-together medical, dental and pharmacists banquet. As many legislators as possible should be urged to attend this dinner. In all the large cities of the State, in fact, every component or local society should give similar get-together banquets during the month of April and legislators, from their home district, urged to attend.

Several bills effecting the medical, dental and pharmaceutical professions have been introduced at the present session at Springfield. At the get-together banquets the members of the legislature should have impressed upon them the merits or demerits of certain bills and the hazardous tendency of much of the proposed legislation that is being put forward in this and other states.



Liberal Arts Building of James Millikin University



Nurses Home—Decatur & Macon County Hospital



Bird's View of Decatur & Macon Co. Hospital Plan.

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NOTICE

Would the Presidents of the various Alumni Associations signify whether or not they wish to hold Alumni banquets or luncheons during the State Medical Meeting, or join in a class luncheon for all schools? Please notify

Dr. Clarence E. McClelland,
423-8 Standard Life Bldg., Decatur, Ill.

CHICAGO LYING-IN HOSPITAL AND DISPENSARY

A further study of hydatidiform mole has been undertaken at this hospital especially in regard to the frequency of malignancy following this condition. An attempt is being made to collect case reports from outside physicians. Cases reported by physicians will be greatly appreciated and the physician will be given due credit in any literature published.

Address communications to

Robert B. Kennedy, M. D.,
426 E. 5th Street, Chicago, Ill.

DECATUR—THE CENTRAL CITY OF THE CENTRAL STATE

With all the advantages which its strategic position at almost the center of the State and in the center of the great Corn Belt of Illinois, as a starting point, Decatur has advanced its standing as an industrial city, as a city of progressive, public-spirited citizens, as a city of contented workers and as a city with a plan for its future development, until it may well be said to have come to be in truth, The Central City of The Central State.

Decatur has at this time an approximate population of 50,000 with its substantial growth still maintained, having the unusual growth over the ten years previous of over 12,000.

Decatur is the center of a radiating network of railroads which extend to all parts of the country. Twelve railroad lines comprising four systems and three interurban lines furnish direct connections with all principal cities and afford ideal service to local industrial concerns for securing raw materials and for the shipment of finished products.

Decatur has five strong banks, with total deposits of approximately $13,000,000, which furnish the best banking facilities to the business interests of the city.

Decatur has over 90 substantial industrial concerns, with more than 11,000 employees, who receive an annual pay roll of over $12,000,000, and turning out products valued at over $30,000,000.

Decatur has just completed a $2,000,000 Water Impounding Project, which forms a lake 14 miles in length and from ½ to ¾ miles in width, assuring the city of an inexhaustible supply of water for all industrial and domestic uses. The expanse of the lake affords many recreational features to the city, and the entire project opens avenues for greater expansion and development than the city ever realized previously.

Decatur is completing a Sewage Disposal Plant, which, together with intercepting sewers and work incidental to the immediate development, will be finished in 1923, at a cost of $1,250,000. This scientific disposal of the city's sewage removes an obstacle which has threatened to limit expansion in certain directions, and joins up with the water impounding project to great advantage.

Decatur has a City Plan worked out in detail, and a City Planning Commission whose task it is to carry out the purposes of the Plan, acting as an intelligent guide to the city's growth.

DECATUR HOTELS

The city of Decatur is well supplied with first-class hotels, the total capacity being well over seven hundred rooms.

The Hotel Orlando, which will be the general headquarters of the State Medical Society, is a new hotel of fire-proof construction, situated near the heart of the city. Guests of this hotel will find excellent accommodations and lovely surroundings. The several dining rooms will afford opportunity for section and alumni banquets. The exhibits will be placed in the basement of this hotel.

The St. Nicholas, because of historical association and a long existence upon the same spot, is known far and wide to traveling men. Most of the important personages of early Illinois have been entertained within its hospitable doors. A few years ago a large fire-proof annex greatly increased its capacity. It is located upon Lincoln Square, only one block from the meeting place and Exhibit Hall.

The Kraft Hotel, located opposite the railroad station, has long been a favorite with the traveling public. Though some distance from the



Decatur High School



Wabash Hospital



Staley Manufacturing Company
Largest Corn Grinding Plant in the World. Consuming 30,000 Bushels of Corn per Day, Which Is 17% of All the Cash Corn in Illinois.



Hotel Orlando
General Headquarters of State Medical Society. General Sessions. Exhibits Displayed in Basement.



Decatur's Most Modern School Building, Roosevelt Junior High School



Main Building of Decatur & Macon Co. Hospital



Newly Constructed Tuberculosis Sanitorium, Decatur and Macon County Hospital, Will Be Open for Inspection During the State Meeting.



$1,250,000 Sewage Disposal Plant in Process of Construction Under Local Contractors



Water Street Looking North from Central Park



The National Bank of Decatur



St. Mary's Hospital

meeting place it is convenient to the trains, and very reasonable in price.

The Brunswick, one of the older hotels, is located directly opposite the Orlando, and is thus convenient to the general sessions and Exhibit Hall.

The St. James, which has rooms only, is in the same block as the St. Nicholas Hotel and o ne block west of the general headquarters.

For full particulars as to rates, etc., see the table on adjoining page.

DECATUR AND MACON COUNTY HOSPITAL

Decatur is favored by the possession of a new and modern hospital, established and fostered by officials and citizens of both Decatur and Macon County. This institution provides service which is characterized by scientific method and modern convenience in the treatment of all diseases.

It represents an outlay of $100,000. It contains one hundred and fifty beds and is planned to provide for further expansion.

A new addition recently made is the Tuberculosis Sanitorium. This phase of the work, when service is actually begun, will broaden and deepen the value of the hospital to the community in both prevention and cure.

The Nurses' Training School has recently affiliated itself with the James Millikin University in an arrangement by which the student may, by doing part of her work at the University and part at the hospital, secure a Bachelor's degree as well as her hospital diploma, the course covering five years.

ST. MARY'S HOSPITAL

St. Mary's Hospital is the oldest hospital in Decatur, having been established by the Sisters of St. Francis since the year 1886. For six years previous to this, the Sisters were engaged in charitable work, going from house to house ministering to the sick and needy. The original building accommodated about thirty-five patients. The capacity soon became inadequate, and several additions have been added at various times until now the capacity of the Hospital is about ninety beds. In the South East addition are located the New Operating rooms, which are modern in every respect the doctor's dressing room and bath; and anaesthetizing room.

Owing to the insistent demands an Obstetrical department has been recently established, and now fills a long felt want, it has flourished from its inception on the third floor of the East Wing.

The X-Ray department was inaugurated in 1915, as well as the present pathological laboratory: Six rooms on the first floor of the East Wing have been assigned to the new X-Ray department. These rooms are equipped with the best and most efficient apparatus that can be procured. The deep-therapy installation is a model of this type of construction.

A new addition is now planned. This will comprise a building for housing the new heating plant, a cloister for the Sisters, together with additional rooms for patients.

Wabash Hospital

The Wabash Employes Hospital was built in 1903, and is maintained by the employes of the Wabash Railway. It has a capacity of sixty beds, and the Sisters of St. Francis have charge of the house and nursing.

There is an Out-patient department. The number of patients treated in the hospital for the fiscal year ending June 30, 1922, was 851, the number of days treatment 8,243. The number of patients treated in the dispensary department was 15,075.

Pathological and X-ray Laboratories are maintained. There is a Surgeon-in-Charge, and two House Surgeons, as well as a complete staff of specialists and consulting surgeons. An ambulance service for employes is maintained.

The Wabash Hospital in Decatur, is one of three hospitals maintained by the employes of the Wabash Railway, the other two being at Peru, Indiana; and Moberly, Missouri.

THE JAMES MILLIKIN UNIVERSITY

The James Millikin University represents a remarkable educational achievement. Established less than twenty-five years ago, it has attracted much attention by the rapidity and solidity of its growth.

Its aim is to combine the ideals and method of the small Christian college with the modern educational emphasis. In this spirit it offers the liberal arts as the core of education in addition to courses in manual training, engineering, household arts, fine and applied arts, commerce and finance, library science, and music. It pre-

pares many students for medical and law schools.

On these lines, it has developed to an enrollment in all schools of around 1,200 each year.

Its plant forms one of the show places of Decatur, for its Elizabethan buildings are lovely in line and color in a campus setting of natural beauty. Studios, laboratories, and library are well equipped.

SCHOOL TEACHERS SOMETIMES, AND SCHOOL NURSES MORE OFTEN, ARE HEARD TO SAY THAT THEY HAVE ADDED THE PRACTICE OF MEDICINE TO THEIR OTHER DUTIES

According to the Sacramento "Union" a large program of medical examination and welfare work is being carried on for the children of Sacramento County under the jurisdiction of the local chapter of the Red Cross and Mr. Hughes, city superintendent of schools, and aided by nurses.

"Three hundred and eighty-seven youngsters were weighed and measured, and 183 were given a physical examination by the nurse." It is further stated that the welfare work in the city of Sacramento has become active with the opening of the fall term of the schools. This work "will be handled directly by a staff of three, consisting of one director and two nurses, who will watch the health of Capital City youngsters with a professionally trained eye. Heretofore the health of the Sacramento school children has been observed by the director of physical training." When nurses make physical examinations and "watch the health of children with a professionally trained eye" under the direction of a superintendent of education or a "physical director," what may we expect next? School teachers sometimes, and school nurses more often, are heard to say that they have added the practice of medicine to their other duties. What do the physicians of Sacramento think of this procedure.—*Caifornia State Journal of M.*, October, 1922.

FRENCH DOCTOR TO BE TRIED FOR FALSE DIAGNOSIS

According to press dispatches from Paris dated October 6th, the magistrate's court at Evreux, France, has ordered the trial of Dr. Vallet on the charge of causing the death of a patient through erroneous diagnosis. It is said that Dr. Vallet recently operated on a woman for a fibroid tumor and the operation disclosed the fact that the woman was pregnant. A correctional operation was done immediately and the child was saved but the woman died. Dr. Louis Dartigues, vice-president of the Society of Medicine of Paris, who was called as a witness, expressed his indignation at the decision of the provincial courts, asking by what right infallibility was demanded of the medical profession and not of other professions.

ILLINOIS STATE MEDICAL SOCIETY

PRELIMINARY PROGRAM

Seventy-third Annual Meeting

Decatur, May 15, 16, 17, 1923

Order of Proceedings

Registration office in the left wing of the Exhibit Hall in the basement of Orlando Hotel.

First Day—Tuesday Morning

9:30—Diagnostic and Instruction Clinics of the Section on Eye, Ear, Nose and Throat, Palm Room, Orlando Hotel. Other Clinics, surgical or diagnostic: Local committee.

First Day—Afternoon

2:00—Call to order of the Society in General Session by the President, E. P. Sloan, Bloomington, in the ballroom, Orlando Hotel.

Invocation—Address of Welcome.

Report of the Chairman of the Committee on Arrangements.

2:30—Call to order of the Secretaries' Conference, President R. O. Hawthorne, Monticello, in the ballroom annex.

First Day—Evening

8:00—Call to order of the House of Delegates, in the ballroom by President E. P. Sloan.

Second Day—Wednesday Morning

8:30—Call to order of the several sections for the reading and discussion of the papers of the program:

Section One—Call to order of the Section on Medicine in the Circuit Court room by the Chairman, E. W. Mueller, Chicago.

Section Two—Call to order of the Section on Surgery in the Ballroom, Orlando Hotel, by the Chairman, Mather Pfeiffenberger, Alton.

Section Three—Call to order of the Section on Eye, Ear, Nose and Throat, in the Palm Room Orlando Hotel, by the Chairman, A. L. Adams, Jacksonville.

Section Four—Call to order of the Section on Public Health and Hygiene in the second-floor dining-room, Orlando Hotel, by the Chairman, C. S. Skaggs, East St. Louis.

12:00—Adjournment for luncheon.

Second Day—Afternoon

1:00—Call to order of the Sections for the continuation of the program.

4:00—Meeting of the Medico-Legal Committee with its component society advisors, third-floor dining-room, Orlando Hotel, C. B. King, Chicago, Chairman.

5:30—Adjournment for Dinner.

Second Day—Evening

7:30—Address: Robert Emmett Farr, M. D., Minneapolis, Minn. This address, in the Ballroom, Orlando Hotel, is open to the public.

8:30—Entertainment for members and guests. Local Committee.

Third Day—Thursday Morning

8:30—Call to order of the House of Delegates for the election of officers, and of the Sections for the continuation of the program:

SECTION ONE—Ballroom.

SECTION TWO—Palm Room.

SECTION THREE — Second-floor dining-room.

HOUSE OF DELEGATES—Circuit Court room.

11:00—ORATION IN SURGERY — Ballroom, Orlando Hotel.

12:00—Adjournment for luncheon.

Third Day—Afternoon

1:00—Call to order of the Sections for the election of officers. For this assembly SECTION THREE will convene in the third-floor dining-room.

1:20—Call to order in General Session; Ballroom, Orlando Hotel. Address of the President, E. P. Sloan, Bloomington.

Oration in Medicine, Martin H. Fischer, Cincinnati, Ohio.

Report of the House of Delegates.

Induction of the President-elect.

Continuation of the Section programs.

5:30—Final adjournment.

SECTION ON SURGERY

Cervical Ribs and Exostoses—John F. Sloan, Peoria.

Surgical Errors—Ralph McReynolds, Quincy.

End Results in 1,000 Tonsillectomies, a follow-up study—Walter Stevenson, Quincy.

The Treatment of Fibroids of the Uterus—E. C. Roos, Decatur.

The Surgical Treatment of Chronic Intestinal Stasis—J. G. Young, Pontiac.

Indications and Technique for Major Chest Surgery—Don Deal, George Thomas Palmer and Herman H. Cole, Springfield.

Surgical Treatment of Pulmonary Abscess—Ben D. Baird, Galesburg.

Chronic Septic Splenomegaly Syndromes — F. Buckmaster, Effingham.

Carcinoma of the Stomach—Frederick G. Dyas, Chicago.

Immediate Reduction in the Treatment of Fractures—George G. Davis, Chicago.

Urgent Surgery of the Stomach and Duodenum—Karl A. Meyer, Chicago.

Tuberculosis of the Coccyx—Vernon C. David, Chicago.

The Surgical Aspects of Chronic Pancreatitis—Frank D. Moore, Chicago.

Ventriculography—Its Place in Brain Surgery—Geo. Davenport, Chicago.

SECTION ON MEDICINE

Radium Emanation Ampoules in the Treatment of Cancer of the Tongue—Frank E. Simpson, Chicago.

Treatment of Amebic Dysentery—A. A. Goldsmith, Chicago.

Treatment of Lung Abscess—Herbert W. Gray, Chicago.

The Determination of a Cure of Gonorrhea in the Male—Frank M. Phifer, Chicago.

Present-Day Needs of Life Insurance Examinations—O. F. Maxon, Springfield.

Duodenal Ulcer—Frank Deneen, Bloomington.
Discussion—George W. Parker, Peoria.

Spontaneous Pneumothorax with a case report—C. George Appelle, Champaign.

Clinical Manifestations of Spirochaetal Strains—Robert E. L. Gunning, Galesburg.

An unusual case of Endocarditis with a report of a case—Milton E. Rose, Decatur.

Some of the Essentials in the Diagnosis and Treatment of Pericarditis with Effusion—E. S. Murphy, Dixon.

Malaria—Louis J. Petritz, Rockford.

A Report of Some Unusual Tumors of the Gastro-Intestinal Tract—Damon A. Brown, Peoria.

Discussion—Milton E. Rose, Decatur.

SECTION ON EYE, EAR, NOSE AND THROAT

Tuesday—May 15—8:30 A. M. to 5 P. M.
Palm Room, Orlando Hotel

Diagnosis and Instruction Clinic.

The Use of the Schlitt Lamp—Robert Van der Heydt.

The Technique of Cataract Extraction — With Demonstration on Pig's Eyes—H. W. Woodruff, Joliet.

Acute Infection of the Nasal Sinuses—Charles M. Robertson, Chicago.

Chronic Infection of the Nasal Sinuses—A. H. Andrews, Chicago.

Acute Suppurative Otitis Medias — George W. Boot, Chicago.

Chronic Suppurative Otitis Medias—Joseph C. Beck, Chicago.

Demonstration of the Anatomy of the Brain and Cranial Nerves on Recent Specimens—Jacob Burkholder, Chicago.

Operations on the Eye Muscles—Moving Picture Demonstration—H. W. Woodruff, Joliet.

Tuesday Evening—May 15—6 P. M.

Banquet, Orlando Hotel.

A splendid program of music, speaking and entertainment has been provided by the Committee of Arrangements in Decatur.

Please notify Dr. C. E. McClelland, Decatur, Chairman, of number of plates you wish reserved.

Wednesday—8:30 A. M. to 5:00 P. M.
Orlando Hotel

A Further Report on the Status Lymphaticus—Richard J. Tivnen, Chicago.

Discussion—E. R. Crossley, Chicago.

Carcinoma of the Larynx—Frank J. Novak, Jr., Chicago.

Discussion—Otto Freer, Chicago.

Unusual Eye Manifestations of Cerebral Syphilis—Carroll B. Welton, Peoria.

Discussion—Raymond R. Harrington, Chicago.

The Keeping of Records in the Practice of Oto-Laryngology—Joseph C. Beck, Chicago.

Discussion—Frank Allport, Chicago.

Nine Years of Clinical Research on the Trachoma Question—Edward E. Edmondson, Mt. Vernon.

Discussion—James S. Johnson, Cairo.

The Technique of the Trephining Operation for Glaucoma—H. W. Woodruff, Joliet.

Discussion—Willis O. Nance, Chicago.

Heterophorias of Nasal Origin—A. H. Andrews, Chicago.

HOTEL ACCOMMODATIONS FOR STATE MEETING

To be held in Decatur, Illinois, May 15, 16, 17, 1923

MAKE ALL RESERVATIONS DIRECTLY WITH HOTELS

Hotel	Location	No. of Rooms	With Bath	Without Bath	Double, With Bath	Double, Without Bath
Orlando (Headquarters)	Cor. S. Water and E. Wood Sts.	192	$2.50, $3.00, $3.50 (shower) $3.50, $4.00, $5.00 (tub)	$2.00 and $2.50	$4.50 to $9.00	
St. Nicholas	Lincoln Square	221	$2.00-$2.50	$1.50-$1.75	$3.75-$4.75	$2.75-$3.25
Kraft	Opposite R. R. Stations	90	$1.75-$3.00	$1.00-$1.25	$3.00	$1.50-$2.00
Brunswick	Cor. S. Water and E. Wood Sts.	50		$1.50		$2.00
St. James	153 S. Main St.	80	$1.50-$2.50	$1.00		

Members desiring rooms in private homes, write to Chairman of Hotel and Accommodations Committee. Those coming by auto, report to Headquarters, where they will be directed to garages.

DR. C. MARTIN WOOD,
Chairman, Hotel and Accommodations Committee.

Discussion—Thomas Faith, Chicago.

Cataract Extraction with Complications: 1. Non-Union of Wound. 2. In Presence of Facial Paralysis—L. Ostrom, Rock Island.

Discussion—Solomon Jones, Danville.

Local Anesthesia in Mastoid Operations—George W. Boot, Chicago.

Discussion—H. P. Bagley, Galesburg.

Recurrence of Tonsils After Tonsillectomy—Charles H. Long, Chicago.

Discussion—Charles M. Robertson, Chicago.

A Tympanic Tumor—E. C. Duntley, Bushnell.

Discussion—J. Neiss, Carmi.

Diabetic Lesions of the Eye—Francis Lane, Chicago.

Discussion—C. O. Schneider, Chicago.

Negative Pressure in the Treatment of the Diseases of the Nose and the Accessory Sinuses—G. C. Otrich, Belleville.

Discussion—Arthur Geiger, Chicago.

Etiology of Ocular Diseases—Michael Goldenburg, Chicago.

Discussion—O. E. Fink, Danville.

Post-Graduate Teaching—D. D. Barr, Taylorville.

Discussion—C. O. Nelms, Hoopeston.

A New Technique for the Removal of Tonsils with Complete and Definite Hemostasis Following the Principles of General Surgery—O. M. Steffenson, Chicago.

Discussion—Edward F. Garraghan, Chicago.

Personal Experiences in Bronchoscopy and Esophagoscopy During the Past Year—Edwin McGinnis, Chicago.

Discussion—D. J. Evans, Aurora.

Tonsillar Diseases and Sterility in Women—André L. Stapler, Chicago.

Discussion—Henry R. Boettcher, Chicago.

Traumatic Abscess of the Nasal Septum in Children—C. F. Yerger, Chicago.

Discussion—A. B. Middleton, Pontiac.

The Intratracheal Injections of Oils—James E. Lebensohn, Chicago.

Discussion—Jacques Holinger, Chicago.

SECTION ON PUBLIC HEALTH AND HYGIENE

Scientific Meeting—May 16, 1923—8:30 A. M.

The Next Step in Control of Tuberculosis—Grace Wightman, Chicago.

Discussion—J. H. Fulgham, East St. Louis.

Present Status of Venereal Disease Control—C. C. Pierce, Washington.

Discussion—Royal Tharp, East St. Louis.

Pneumonia, a Public Health Problem—W. A. Evans, Chicago.

Discussion—Herman N. Bundesen, Chicago.

Birth Registration in Illinois—I. D. Rawlings, Springfield.

Discussion—B. Hutcheson, Cairo.

Milk, a Health Problem in Illinois—John Dill Robertson, Chicago.

Discussion—W. H. Gilmore, Benton.

Status of Epidemic Encephalitis as an Infectious Disease—Peter Bassoe, Chicago.

Discussion—F. G. Norbury, Jacksonville.

Public Health Nursing in Illinois—Madge D. Reiseman, R. N., Springfield.

Discussion—H. A. Cables, East St. Louis.

Control of Diphtheria—R. V. Brokaw, Jacksonville.

Discussion—C. T. Roome, Evanston.

Rendering Luetics Non-infectious, a Public Health Problem—Joseph Welfeld, Chicago.

Discussion—I. H. Neece, Decatur.

Community Responsibility in Child Hygiene—H. O. Jones, Chicago.

Discussion—Elizabeth B. Ball, Quincy.

Value of Full-Time Health Officer—E. W. Weis, La Salle.

Discussion—H. N. Heflin, Kewanee.

SECRETARIES' CONFERENCE

Tuesday—May 15, 1923

Opening Address—President R. O. Hawthorne, Monticello.

Minutes of last meeting.

The Councilor—His Duty to State and County Societies—C. S. Nelson, Springfield.

Advertising—Geo. S. Bower, Galesburg.

State Medical Society and the Legislature—Senator Harry G. Wright, DeKalb.

ANTIVIVISECTION BILLS KILLED

The New York State Assembly Codes Committee voted unanimously to kill the Cotillo-Leininger Anti-vivisection bills. One was designed to prevent "experimentation" on children, and the other would have prevented surgeons from making experiments on living dogs. Assemblyman Duke, chairman of the committee, declared the real purpose of the child bill was "to advance Christian Science" by preventing medical treatment for children unless their parents consented. The penal law now forces parents to provide medical treatment for their children.

WHEN PUBLIC HEALTH IS DIRECTED BY STATISTICIANS AND PLAY GROUND SUPERVISORS

Are the Doctors on the Wrong Side?

The Editor of the *Nevada Medical Bulletin* published by the Nevada State Medical Society, in his February 15, 1923, issue, says: "It seems to be a rather popular idea at Carson that when the medical profession takes side on any bill that we are doing it for purely selfish reasons, and some of the folks down there take great pleasure in alluding to the Nevada State Medical Association as 'The Medical Trust.'"

The Editor further says: "The only 'trust' we can see about it is that we trust too many people for fees that we never get, and it is about time that we tighten up a little. Wonder what the lay director of the Sheppard-Towner propaganda, and the nurses employed, would do if the physicians were to refuse to help them out of the difficulties they get into. And still some of the proponents of that bill took pleasure at Carson in intimating that the Doctors are incompetent and that they formed the 'Medical Trust.'

"We need to look after our own interests a little more and the way to do it is by organization. That is the way our enemies get what they want, so why not try to get every eligible to join our State Association?"

We sympathize with Nevada Doctors. We have our own troubles no less menacing in Illinois. Unless the profession wake up and organize for mutual defense of the profession and the public health we see in the not far distant future the practice of medicine supervised by a salaried lay director with lay assistant, all social workers and tax eaters, governed by a political appointee.

It is time that the medical profession and thinking laymen awake to the decisive issues that confront the American public. There is much before us that needs our close attention. Let us wake up, or long before we have State Medicine a large proportion of medical practice will be dominated, directed and controlled by laymen, whose ambition and rapidly developing pride of profession is an insane desire to get on the pay roll and establish in America a Bureaucracy that would put to shame the Bureau dictation of Czars in the heyday of their greatest influence and when this comes the Doctors will be relegated to the subservient and inoffensive role of helpers and when this dreamland of the millennium of the social uplifter arrives the infirm, the sick and the disabled of America will receive the worst medical care that it is possible to imagine.

THE DELUSION OF FEDERAL AID

The followng editorials from the *Chicago Tribune* and *Chicago Daily News* under date of March 29 shows that the lay papers are at last awake to the dangers of "Federal Aid, State Subsidies, etc."

Nowhere in public life are the dangers of State Subsidies and National control of local affairs more manifest than in public health matters. For several years we have fought this menace unaided. We are more than pleased to note that the menaces we have called attention to are now recognized by the thinking men of the country.

Two bills are pending before the Illinois legislature which are designed to record this state's acceptance of the Sheppard-Towner bill, with its federal and provisions for care of needy mothers and infants. They illustrate once more the growing tendency in this country to multiply laws, centralize power, and evade direct responsibility in an unintelligent effort to make life easy and fool proof.

The care of needy mothers and infants is a worthy cause. But it is in no way a function of our federal government. Those who would make it so by registering Illinois' approval of the bill in question are working toward the further centralization of government in this country, the breaking down of safeguards which state governments must maintain for the citizens of their comparatively restricted and specialized areas, and the encouragement of extravagance in government.

Unless the taxpayers of this state are so altruistic that they are willing to give twice as much as they receive for the care of needy mothers and children, they will stop this tendency at once. We cannot forget that federal aid must come from our own pockets. The taxpayers of the country provide the federal revenue. The taxpayers of Illinois provide approximately 8.46 per cent. of that revenue. Approval of the Sheppard-Towner bill, or any other bill providing for "federal aid," means only that we must be taxed enough more to provide the treasury with funds to return to us for a specific purpose, and to give, in part, to other states for a similar purpose.

Thus Illinois would receive as "benefits" from the Sheppard-Towner act $58,739 the first year and $53,739 the subsequent years, while her taxpayers

would pay into the federal fund for this distribution to the other states $125,368 the first year and $104,953 in subsequent years, in addition to which she would be adding $48,739 each year to state taxes. There is definite expense, and incentive for waste and extravagance in that.

If it is wise for government to care for needy mothers and children, it should be done by state and local, not by federal government. We can get nothing in this matter from the latter which we do not first give to it, and only a fraction of that. The tendency to delude ourselves into the belief that we are getting something for nothing and the tendency to crowd more and more improper functions upon the federal government are serious evils. They must be fought.

REJECT THE HUMILIATING FEDERAL AID

The following is from the *Chicago Daily News* under date of March 29. The *Daily News* with the *Chicago Tribune* have the largest circulation and are the most influential papers in the West. The following is its comment on the Bill in the State Legislature seeking co-operation with the federal maternity act.

In urging the members of the Illinois general assembly to defeat house bill 298 and senate bill 175, which involve acceptance of the so-called benefits of the federal maternity act, the Civic federation of Chicago gives amply adequate reasons for making the request.

The law in question, providing for the care of mothers and young infants, "involves the principle of extending federal aid to all sorts of functions of chiefly local concerns," which principle "is an open door" to governmental extravagance. Further, the measure tends to break down local self-government and materially extends the powers of national authority. Anything that weakens the self-reliance of the individual or the community is a direct invitation to dependence and the servile attitude that goes with it.

A peculiarly mischievous quality of the federal maternity act, like similar federal measures which have been adopted or advocated, is that it ostensibly gives something for nothing. The fact is that such legislation constitutes a bold abstraction of funds from the pockets of Illinois taxpayers. The estimates of the Civic federation are interesting. "Illinois," it says, "would receive as 'benefits' from the federal act $58,739 the first year and $53,739 the second and subsequent years, while her taxpayers would pay into the federal fund for this distribution to the other states $125,268 the first year and $104,953 the second and subsequent years, in addition to which she would be adding $48,739 each year to the state taxes."

But some persons argue that, since the federal law is in existence and since other states are drawing federal money as a result of it, Illinois should be alert to take advantage of the proffered distribution. The sufficient answer is that the act will cease to operate in four years unless congress is encouraged to extend it. As the Civic federation says, "Its acceptance by the Illinois general assembly would encourage a renewal of this imposition upon Illinois citizens and the creation of more like it." Illinois should range itself with New York, Massachusetts, Maine, Louisiana, Rhode Island and Washington, which as a matter of principle—a sound and wholesome principle—have refuse to accept the terms of the federal maternity act.

Illinois, through its various local governments, is ready and willing to take care of any mothers and infants who need assistance. In so doing it will maintain its independence. Acceptance of doles from federal authority is both humiliating and demoralizing. This state cannot stoop to mendicancy without suffering the inevitable consequences.

THE CIVIC FEDERATION OF CHICAGO CONDEMNS SHEPPARD-TOWNER ACT. FEDERAL AID AND STATE SUBSIDIES A MENACE

The Civic Federation of Chicago in Bulletin No. 50, March 1923, has the following to say relative to Illinois co-operating with the Sheppard-Towner Act.

Believing that the purposes contemplated by house bill 298 and senate bill 175 can be accomplished in a more effective and satisfactory way, we urge the defeat of these bills requiring Illinois to submit to and accept all the provisions and "benefits" of the federal act "for the promotion of the welfare and hygiene of maternity and infancy, and for other purposes."

The three principal objections to accepting these "benefits" and provisions are that:

1. It involves the principle of extending federal aid to all sorts of functions of chiefly local concerns, which principle is an open door to extravagance on the part of both the national government and the state government, and which has been condemned by the National Tax Association, the Chamber of Commerce of the United States and leading political economists.

2. Like all federal aid measures it leads toward the domination of the state by the federal government and in consequence to the breakdown of local self-government which has been the corner stone of our Republic. Note that section 2 of these bills empowers the Illinois Department of Public Health to "prepare and submit plans and enter into agreements" with the Federal Board of Maternity and Infant Hygiene.

3. It is poor economy from the standpoint of Illinois and her taxpayers. Illinois pays approximately 8.46 per cent. of all the internal revenues collected by the United States government. Thus

Illinois would receive as the "benefits" from this federal act $58,739 the first year and $53,739 the second and subsequent years, while her taxpayers would pay into the federal fund for this distribution to the other states $125,268 the first year and $104,953 the second and subsequent years, in addition to which she would be adding $48,739 each year to the state taxes. This particular "federal aid" act will cease automatically in four years and its acceptance by the Illinois general assembly would encourage a renewal of this imposition upon Illinois citizens, and the creation of more like it.

In referring to this subject in the current budget, state director of Finance, A. C. Bollinger, says: "There is a growing conviction that a separation between the federal and state government would bring about more efficiency and economy in operation. The general assembly of the state of Illinois has not accepted the terms of the act for maternity and infancy welfare, and this budget does not include a recommendation that this be done."

Ex-Governor Lowden of Illinois and Ex-Vice-President Marshall of the United States have issued urgent warnings against the danger to the cause both of local self-government and sound public finance of going further with these federal aid measures.

Six states — New York, Massachusetts, Maine, Louisiana, Rhode Island and Washington, have refused to concur in the terms of this act. Only sixteen state legislatures since the enactment of the federal maternity act, November 22, 1921, thus far have voted to accept its terms, according to a recently published statement. The last Nebraska state legislature adopted a strong resolution urging its senators and representatives at Washington to enact no more federal aid laws. The constitutionality of the federal act is now being attacked by the state of Massachusetts in the United States Supreme Court.

Illinois through its state, county or municipal governments is entirely capable by local appropriation and taxation to provide all the assistance which unfortunate mothers and infants may lack. It requires neither financial assistance nor direction and guidance from the federal government at Washington, to do this. Neither should it be compelled to weaken the spirit of independence which has characterized our citizenship and our Nation by offering such free public aid to all without regard to financial ability.

We, therefore, believe that the members of the Illinois general assembly will act wisely in refusing to accept the provisions of this federal act by defeating these bills, at the same time seeing that adequate provision is made through the state or local governments to give unfortunate mothers and children such aid as experience and scientific experts may from time to time recommend as necessary.

Respectfully submitted,
THE CIVIC FEDERATION OF CHICAGO,
Clayton Mark,
President.
Douglas Sutherland,
Secretary.

108 South La Salle St.
Chicago, Illinois.

DEFEAT BILL PROVIDING FOR CO-OPERATION WITH SHEPPARD-TOWNER ACT

In the Legislature at Springfield is a bill the purport of which is to provide for co-operation with the Sheppard-Towner Act. In the Senate it is known as Senate Bill number 175 and in the House as House Bill 298. In the Senate the Bill was referred to the Committee on Public Health, Hygiene and Sanitation. In the House it was referred to the Appropriations Committee. The Bill is on hearing before a joint committee of the house and Senate in the Senate Chambers at Springfield, April 25th, at 2 p. m. Don't fail to be present at the hearing and register your protest; in the meantime see your Senator and Representative and write to those you are unable to see.

The following is the personnel of the two committees:

The Senate Committee on Public Health, Hygiene and Sanitation:

Lowell B. Mason, Oak Park, Ill.
Martin R. Carlson, Moline, Ill.
Sam'l Ettelson, 3841 Grand Boul., Chicago.
Herman J. Haenisch, 3816 Rokeby St., Chicago.
John T. Joyce, 227 Oak St., Chicago.
Harold C. Kessinger, Aurora, Ill.
E. C. Mills, Virginia, Ill.
Wm. J. Sneed, Herrin, Ill.
Harry G. Wright, DeKalb, Ill.
John J. Boehm, 729 W. 18th St., Chicago.
Ed. J. Hughes, 3339 Fulton St., Chicago.

The following are members of the Appropriations Committee of the House:

Edward J. Smejkel, 560 Bunker, Chicago.
Homer J. Tice, Greenview.
Thomas Curran, 2023 S. Racine Ave., Chicago.
Otto C. Sonnemann, Carlinville.
Carl Mueller, 2142 Lincoln Park W., Chicago

Wm. R. McCabe, Lockport.
C. L. Mackin, Salem.
H. N. Boshell, Melvin.
Frank E. Abbey, Biggsville.
Charles W. Baker, Monroe Center.
James W. Rentchler, Belleville.
John Clark, Decatur.
A. L. Stanfield, Paris.
Owen B. West, Yates City.
Harry Wilson, Pinckneyville.
Joseph Meyers, Scotia Mills.
C. M. Turner, Wenona.
A. H. Roberts, 3405 Calumet Ave., Chicago.
Rollo R. Robbins, Augusta.
Chris Rethmeier, Edwardsville.
Lincoln Bancroft, Greenup.
Uclid B. Rogers, Springfield.
A. Rostenkowski, 1237 Noble St., Chicago.
A. J. Rutshaw, 835 W. 50th St., Chicago.
C. B. Sawyer, Kankakee.
T. R. Steinert, 2112 Powell Ave., Chicago.
B. L. Barber, Springfield.
M. A. Brennan, Bloomington.
Lee O'Neil Browne, Ottawa.
Michael Fahy, Toluca.
Charles E. Flack, Macomb.
F. A. Garesche, Madison.
John Griffin, 2020 Indiana Ave., Chicago.
Michael Igoe, 5434 Cornell Ave., Chicago.
A. B. Lager, Carlyle.
D. H. McClugage, Peoria.
B. M. Mitchell, 110 S. Dearborn St., Chicago.
F. W. Morrasy, Sheffield.
Joseph Placek, 2347 S. Kedzie, Chicago.
Arthur Roe, Vandalia.
H. A. Shepard, Jerseyville.
Peter F. Smith, 1608 S. Union, Chicago.
F. E. Williamson, Urbana.
John P. Devine, Dixon.
G. A. Dahlberg, 147 E. 111th St., Chicago.
L. F. Arnold, Newton.
G. J. Johnson, Paxton.
E. M. Overland, 3228 Hirsch Ave., Chicago.

MOTHER'S TREATMENT

When little Percival arrived at school on the opening day, he carried the following note to the teacher:

"Dear Teacher: Our sweet little Percival is a very nervous child, and if he is naughty—and he is likely to be naughty at times—just punish the boy next to him, and that will frighten him so, he'll be good."

HERE IS AN EYE-OPENER AS TO THE WAY THAT ORGANIZED MEDDLING IS SETTING OUT TO CRUSH COMPLETELY THE EVERY-DAY DOCTOR WHO IS AT WORK TO SAVE LIFE RATHER THAN TO PRODUCE STATISTICS AND EFFICIENCY REPORTS

The welfarers, alarmed by signs of protest indicating that everyday doctors are waking up to the plots against their profession are setting forth a fine line of soft soap. Time was that their first-aid kits of socialistic legislation, free medical service, and the like were packed only for the help of the patient. Now the doctor is getting a look-in, albeit the view may make him cross-eyed before he has finished.

A sample of this newest branch of "welfare work" is seen in the Cornell Pay clinic of New York city. Not content with corrupting the self-respect of the destitute and debauching the practice of medicine in that direction, this clinic turns its efforts towards the "persons of moderate income." If there has been any set of "persons of moderate income" more moderate than those of the physician-at-large since radicalism began to eat into the foundations of the skilled professions, it would be comforting to know where these persons are to be found. To the man up a tree, despite all the highsounding promises indicated by the various advisory committees, the establishment of such pay (?) clinics as these means that the paying is all going to be done by the doctor who loses heart in his work, and the patient who is consequently compelled to put up with less efficient and with persistently standardized, machine-like service. The fellow who will batten at the expense of these two classes will be the already luxurious welfarer, who through these new institutions will find still further and fresher fields opened for his predatory instincts.

Begging the question of the accusations that have been made against them because of their assaults upon the profession of medicine, the welfarers come out with intense apologies and a surface desire to help rehabilitate the profession they have been doing their best to junk, casting it into the discard with their wreckage of the public health. Admitting that one-seventh of the free medical treatment of the country is dispensed in the Borough of Manhattan the

powers behind this newly conceived pay clinic are proceeding on a route that would seem liable to induce seven times the amount of free medical service not only in New York but elsewhere. The disparaging attitude of condescension held by the report of the clinic committee, against the rank and file of the medical profession should stir up legitimate choler against this group of meddlesome Matties who would time nature in her processes, regulate epidemics by the eight-hour day and generally put in order that which they know nothing about.

This newest endeavor of welfare work against the profession of medicine has been subject to numerous euphemistic captions. Not the least of which terms it:

"An attempt to conserve the interests of medical men so that ultimately public welfare will not suffer and at the same time provide capable medical attention for poor or moderately incomed patients that is being experimented with at the Cornell Pay clinic in New York city."

SHOULD THE WHOLE FAMILY BE ELIGIBLE UNDER MOTHERS' PENSION LAWS?

Although the earliest laws for Mothers' Pensions were passed in 1911, the growth of legislation of this nature has been so rapid that already there is under discussion the necessity for a national uniformity in this branch of public welfare.

All along the line come indications that the welfarists and professional statute makers have undertaken to masticate some unwieldy chunks. Perversion of the law is only too frequent a factor in living up to its letter. A recent editorial in the *New York Times* remarks:

"The extent to which such pensions are distributed today will come to many people as a surprise . . . . The most enthusiastic supporters of the movement are dissatisfied with the present situation. In all parts of the country they may be said to be feeling their way to a more effective method. In time it is believed the present system will be replaced in large measure by a democratic scheme of social insurance.

"In several states such pensions are even distributed to grandmothers, stepmothers and other female relatives, guardians, and even unmarried mothers, while in at least one state (Colorado) even fathers are included in the general phrase "any parent."

It is all very interesting. Especially in view of the fact that when this socialization of a nation is complete, and when the Declaration of Independence is followed by an Insistence of Dependence, who is going to pay the bills? Whoever it is it will not be the doctors, of a surety. For at the present rate of socialistic legislation, by that time the medical profession will have been legislated out of existence and surpassed in its entirety by the overtrained and—say it softly, over ignorant nurse!

THE SHEPPARD-TOWNER ACT IS A MOVE FOR BIRTH CONTROL

Before the members of the New Hampshire Legislature at Concord, March 26, Dr. D. E. Sullivan of Concord, Secretary of the New Hampshire Medical Society and an A. M. A. Delegate from that State, charged that opponents of the Bill introduced by Admiral Joseph B. Murdock, representative from Hill, aiming to cut the state loose from co-operation with the federal children's aid bureau, were sanctioning "birth control" practices. Dr. Sullivan's charge was prompted by a statement from Dr. Anna B. Parker of New Hampton that he was instigating a "whispering" campaign against the program for child welfare, sponsored by prominent club women of the state, who are opposing the Murdock bill.

Dr. Sullivan, who says he represents the American Medical and the New Hampshire Medical Societies, both of which have passed resolutions in opposition to the Sheppard-Towner act, declares that instead of conducting a "whispering" campaign, he is shouting "in the open market place at high noon" and will continue to do so "until an aroused public conscience has set its seal of condemnation on the possibility of approval of the practice of birth control by a federal agency."

"A man, claiming to be a practical farmer, speaking against the Murdock bill in a public health committee hearing," said Dr. Sullivan, "advocated having the nurses employed by the bureau of maternity and child welfare when they found women, who in their opinion, were unfitted to bear children, instructed to give such women necessary information. This statement was applauded by the 100 present, nine-tenths of them women.

"Before the same committee, I very properly and very emphatically declared that that message was a living menace, as the leading birth control lists in Russia and this country were most active in Washington lobbying for the 'and other purposes' amend-

ment to the Sheppard-Towner bill. I assured the committee that with the child welfare work conducted by the state board of health there need be no fear of such a damnable practice, but no one could feel safe with Washington empowered to dictate our policy in the execution of the law. I ask the legislators to satisfy their conscience with that dangerous feature of the federal bill before they vote to tie up the state of New Hampshire with it.

"The women who are to decide upon the fitness of motherhood are mostly old maids and Miss Abbott, the head of the children's bureau at Washington, is neither a physician, a nurse or a married woman. The book of Mme. Kolontai, a Russian woman in the pay of Germany, 'commissar of public welfare' under Lenin, high priestess of birth control doctrine, is unqualifiedly indorsed in the pamphlet 'maternity benefit systems in foreign countries,' freely distributed by the children's bureau."

IF NURSES ARE TO BE ENDOWED WHY NOT THE EVER-READY DOCTOR? IT USED TO BE THAT THE DOCTOR DID THE HEALING THROUGH HIS PROFESSIONAL SKILL

Perhaps It Would Be the Point of Wisdom for all Doctors to Take up Nursing in the Race for Self-Preservation

A campaign has been started in New York to endow visiting nurses as a profession, "just as hospital beds are endowed."

Even though this endeavor is as yet in tentative stages the great struggling mass of physicians that devotes years of study and training to the effort of preparing to be skillful enough to make sick people well, can be excused for crying out "Why not endow the doctors?"

Perhaps the doctor is not even a necessary evil in the fight between the human race and mortal ills. Perhaps all that is needed is a great body of nurses who will prolong life and tell the whole medical profession just how far back it can go, and just how hard it can sit down, and where. One of the worst units in the topsyturvy aftermath of war would seem to be this superexaltation of the nurse at the expense of everybody, and most of all at the expense of the physician and worst of all at the expense of the sick people of the world.

Just how far maudlin and misdirected sentiment can go by people who mean to help and who are cursed by that most dangerous of handicaps "a little knowledge" may be guessed by the laudatory publicity being given the proposed "endowment nurses" in New York city.

"It is a matter of comment" cites one report "that many of the great philanthropists of the country have not indicated their recognition of this distinguished service by adequate gifts and bequests. These nurses should be endowed as hospital beds are endowed—for the city is their hospital."

Exactly the power these nurses wield may be partially guaged from another report. Says this:

"The mere technical care of a bedside case is a small part of a public health nurse's work. *A district's standard of health is her responsibility. It is her job to detect malnutrition, incipient tuberculosis and sometimes obscure maladies. If surgical attention is necessary then she arranges for hospital room,* and, when the case comes home, for aftercare."

Ye gods and little fishes! It had always been the understanding of the average physician that that is just what a nurse was for—"the mere technical care of a bedside case." It has taken the welfarers to make a nurse responsible for "a district's standard of health." It has taken the welfarers to decide that a nurse is competent to "detect malnutrition, incipent tuberculosis, and sometimes obscure maladies." There are in this world, and everywhere about in it, physicians of high standing, acknowledged skill and meritorious repute who are puzzled oftentimes in their ability to "detect malnutrition, incipient tuberculosis and sometimes obscure maladies." If a nurse, and especially a public health nurse, is so ultra capable, proficient and efficient, then why, it is to be asked, should such persons be endowed? Rather spend the money in pensioning off the poor deluded doctors whose work is all being done for them by the highly testimonialed superhuman visiting nurse!

The pity of it is the shame of it. And the public will not awaken to the real state of affairs until it is too late to remedy the evil. Better the voodoo doctors of an earlier day than the egotistical over-exalted nurse of today. The hoakum of the voodoo was patent to a large proportion of the citizenry. Unfortunately many people think that all the clap-trap of a certain section of the nursing profession is sanctioned by the medical profession. It begins to look as if the doctors would all have to turn nurses in order to carry on the work of preserving life, and making sick people well.

ATTENTION! PHYSICIANS, DENTISTS AND PHARMACISTS

THE CIVIL ADMINISTRATIVE CODE SHOULD BE AMENDED

To the Editor:

House Bill No. 386, proposed by a special legislative committee of the professions of medicine, dentistry and pharmacy of the State of Illinois, and introduced by the Hon. Euclid B. Rogers of Springfield, amends Sections 5, 7, 9, 11, 13, 60 and 61 of the Civil Administrative Code of the State of Illinois.

The primary object in the proposed amendments is the creation of three official Boards to be known as the Physicians' Examining Board, the Dentists' Examining Board and the Pharmacists' Examining Board. The Physicians' Examining Board shall be made up of five physicians the Dentists' Examining Board shall be made up of five dentists, and the Pharmacists' Examining Board shall be made up of five pharmacists, each officer to have the qualifications specified in Section 7 of this bill.

The members of these boards shall have a definite tenure of office similar to other boards provided for in the Code. The first of these professional boards to be appointed after the enactment of this bill are to serve to the second Monday in January, 1924, when five officers shall be appointed as successors for each Board,—one member for one year, one for two years, one for three years, one for four years and one for five years, respectively, and thereafter respective successors for full terms shall be appointed for five years. A limit of two terms, consecutively, is provided for offices on these Boards. (This latter clause is new in the Code. It is however, soundly American in principle and a safeguard.)

The "Code" now provides that the Director of the Department of Registration and Education shall *"designate" "from time to time"* "five persons" each for Medicine, Dentistry and Pharmacy. It does not specify *when* or *how often* these "persons" *shall be "designated" nor how long* they shall serve—they may be designated to serve a week, a month, or any time. As a consequence there is no assurance that our profession are continually represented by a professional committee (the "five persons") such as the Code contemplates, in fact they have frequently *not been so represented,* our professions being entirely at the mercy of the Department, the Director of which, and all the administrative officers of which the Code explicitly specifies *cannot belong to or be interested in any of the professions, trades or occupations regulated.* And furthermore there is no assurance that a Director will not remove able members of or the entire committee, at any time for any trivial or no just cause.

It is thus evident that Boards with a *definite tenure of office* and a provision that only one member retires annually from the board, having a majority of more or less experienced members always on the board, will be a decided improvement on the indefinite provisions as they exist at present *and also be a decided safeguard.*

The Code now provides in Section 60, after enumerating seven (7) specific *functions and duties* pertaining to conducting examinations, etc., prescribing rules and regulations, etc.; prescribing what shall constitute a school, college or university, etc.; conduct hearings on proceedings to revoke or refuse renewals of licenses, certificates or authorities, etc.; establish a standard of preliminary education, etc., etc., *which functions and duties* are devolved upon the Department of Registration and Education for administration in its name, but subject to the provisions of this Act, that *"none* of the above enumerated functions and duties *shall be exercised by the Department* of Registration and Education *except upon the action and report in writing* of *persons designated from time to time* by the Director of Registration and Education to take such action and to make such report for the respective professions, trades and occupations as follows:" etc.

House Bill No. 386 provides that this same scheme shall be followed with the exception that instead of the "five persons" "designated from time to time" for each profession, there shall be *Boards* with a definite tenure of office with considerable experience and not subject to removal except for cause, that these Boards for the professions of Medicine, Dentistry and Pharmacy shall function in identically the same manner in relation to the above mentioned *"functions and duties"* as is now provided for in Section 60, or in other words, just as the Code now contem-

plates the "five persons" each "designated" "from time to time" by the Director of the Department should act;—*but when,* as has frequently been the case, *there are no "persons designated," what then? Or if the "persons designated" do not act as the Director desires, what then?* These are not idle questions.

It is also provided in this bill that the "action and report in writing" of a majority of the members of a Physicians', Dentists' or Pharmacists' Board shall be sufficient authority upon which the Director of Registration and Education *shall act.* (The Code now says *may act.*)

Section 61 of the Code has been amended causing the President and Secretary of the Board for Medicine, Dentistry and Pharmacy to affix their signatures to every license, renewal, certificate, authority, revocation or other orders issued by the Department, in the name of the Department, for the respective professions named above.

This is also a very important amendment, for it to a far greater extent safeguards the granting of the above named documents and orders. At present licenses, certificates, etc., are signed by only *one man,* a procedure which invited and permitted part of the crimes and scandals of the Miller administration.

The bill provides as compensation a per diem of ten dollars for the time actually employed for the five officers serving on each board together with reimbursement for all traveling and other expenses necessitated by the proper discharge of their duties as such, and a fee not to exceed thirty-five cents each for grading examination books. At present the members of the professional committees receive exactly the same compensation, thus there is no added cost to the tax payers of the State.

Criticism will be made no doubt concerning the creation of Boards *within the Department.* This may be answered by showing that the Department of Registration and Education *already has in it* the Normal School Board, and that several other Departments of State Government *under the Code* have numerous Boards and Commissions—the most likely example of which is the Department of Mines and Minerals, Sections 45 to 48 inclusive. Politicians will also criticize the *five year tenure of office* for members of the boards. Do not fail to call attention to the fact that the Code *now provides* in Section 60 a *six year tenure of office* for members of the Normal School Board, and like the Normal School Board which by this provision has, to an extent at least, been removed from politics—*so should Professional Boards,* that should have as their primary objective the *preservation of life, health and comfort of the people of this State, which is manifold the greatest asset the State has,* so should these Boards, I repeat, be removed as far from political influence and political intrigue as it is possible to place them. There are other minor changes to make the amendments fit into the general construction of the Code but of no particular importance.

The Committee directing the drafting of this bill after very earnest and careful study and consideration has had a fundamental purpose ever in mind—namely—*the protection of the people of the State of Illinois, and the advancement and betterment of professional education. Absolutely no other motive prompted it to act.*

With the aid of expert legal advice the Committee has diligently striven to disturb existing working conditions in the Department of Registration and Education to the *least possible degree* and believes it has succeeded. It has also elevated the dignity of these professions and provided needed safeguards to prevent repetition of unfortunate and disgraceful acts such as have endangered the lives of the people and also besmirched the fair name of Illinois and our professions in the past year or so. The present Director of the Department of Registration and Education, Mr. Shelton, is fully aware of the scope of these proposed changes in the Code. He is whole-heartedly in favor of practically all of these amendments. For this support which Director Shelton has unstintingly given us, we desire to express our sincere appreciation.

IT IS NOW NECESSARY THAT A UNITED, DETERMINED AND EFFECTIVE CAMPAIGN BE INSTITUTED BY THE PROFESSIONS INTERESTED. READ HOUSE BILL NO. 386 CAREFULLY, POINT OUT THE SALIENT FEATURES TO THE LEGISLATORS FROM YOUR DISTRICT. THERE CAN BE NO QUESTION AS TO HOW THEY WILL VOTE ONCE THEY

UNDERSTAND THE IMPORT OF HOUSE BILL NO. 386.

THE COMMITTEE,

CHAS. E. HUMISTON, M. D.,

Representing the Illinois State Medical Society.

MR. S. L. ANTONOW, Ph. G.,

Representing the Illinois Pharmaceutical Association.

G. WALTER DITTMAR, D. D. S.,

Chairman, representing the Illinois State Dental Society.

(Note:—Also acquaint yourself with House Bill No. 455, a much needed new Dental Practice Act, and with House Bill No. 242, the bill for a new Medical Practice Act.)

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H. M. Voris....East St. Louis
A. A. Wilson....Davis
W. C. Wood....Decatur
Rodney A. Wright....De Kalb
H. M. Wolfe....Taylorville
H. Wellmerling....Bloomington
A. R. Whitefort....St. Elmo
Wm. L. Wilson....Hinsdale
N. A. Wright....Manito
F. W. Werner....Joliet
H. W. Woodruff....Joliet
Geo. Woodruff....Joliet
G. B. Wilcox....Joliet
Wm. Welch....Joliet
F. J. Welch....Bloomington
C. F. Wilhelmy....East St. Louis
M. K. Williamson....Alton
J. S. Wead....Wyoming
Alma T. Wead....Wyoming
C. Martin Wood....Decatur
L. G. Wisner....Herscher
W. W. Williams....Quincy
J. D. Worrell....Monmouth
A. E. Williams....Rock Island
Glenn E. Wright....Woodstock
E. W. Weis....La Salle
W. F. Weis....Sparta
L. J. Weir....Marshall
A. Weichert....Barrington
T. H. Wagner....Joliet
L. H. Wiman....La Moille
Geo. A. Nash....Gibson City
C. S. Wilson....Freeburg
E. C. Williams....Downs
C. E. Woodward....Decatur
E. Windmueller....Woodstock
G. T. Weber....Olney
J. A. Weber....Olney
F. J. Weber....Olney
J. C. Weber....Olney

R. S. Watson.....Joliet
Carl H. Wilkinson.....De Kalb
Rhoda Galloway Yolton.....Bloomington
E. Young .....Mansfield
H. A. Zinser.....Washington
H. S. Zimmerman.....Cameron

Note—Will County Medical Society contributed $350.00 to the fund. Rock Island County Medical Society contributed $100.00 to the fund. These two organizations are the only County Societies that as organizations have contributed to the fund.

The proposed campaign cannot be prosecuted without funds; it must be supported by popular subscription. It is hoped that every doctor will subscribe to this worthy cause. Serious disease diverted from the incompetent will result in the saving of thousands of lives and will prevent much permanent invalidism.

This campaign will achieve two great objectives: A gradual, but ultimate restoration of the medical profession to its merited place in the public sympathy and confidence and the inestimable benefits to humanity through the consequent prevention of disease and the preservation of life.

For the convenience of those who have mislaid their letter of Appeal from the State Society, we hereby reproduce the pledge card:

Please sign and mail to the Illinois State Medical Society.

To the Officers of the Illinois State Medical Society and Members of the Council:

"I am in accord with the proposed newspaper educational campaign in the press of Illinois, unanimously adopted by the House of Delegates of the State Society at the 1922 meeting and the plan recommended by the Council of the Society, and as evidence of my desire to co-operate with the Officers of the Council and of the State Society, I hereby enclose my check for $.....to aid in defraying the expenses thereof:

MAKE CHECKS PAYABLE TO THE ILLINOIS STATE MEDICAL SOCIETY.

Name.....M. D.

Street .....

City..... County.....

Sign the above pledge card, make out a check payable to the Illinois State Medical Society and mail both in an envelope addressed as follows:

From

.....

.....

.....

ILLINOIS STATE MEDICAL SOCIETY,
c/o Cashier, Sheridan Trust & Savings Bank,
4738 Broadway,
Chicago, Illinois."

25 E. Washington St.,
Chicago, Ill. Lay Publicity Committee.

CHICAGO MEDICAL SOCIETY SUBSCRIBERS TO THE LAY EDUCATIONAL FUND OF THE ILLINOIS STATE MEDICAL SOCIETY

The list has been carefully checked to make sure of accuracy. If an error has crept in, kindly note same and forward to the Committee.

H. J. Achard
F. L. Andrews
G. Albano
S. B. Adair
Nathaniel H. Adams
E. F. Akstrom
George Amerson
E. M. Arnold
F. G. Anderson
F. W. Allen
Chas. A. Albrecht
T. D. Allen
W. D. Allen
Isaac Abrahams
G. C. Anderson
B. Barker Beeson
J. A. Braham
Frederic A. Bisdom
W. Evan Baker
W. F. Becker
Peter Bassoe
J. C. Berry
A. Walter Burke
A. H. Brumback
Charles M. Bacon
W. S. Bougher
G. T. Bauer
H. L. Baker
H. R. Baumgarth
H. R. Boettcher
J. M. Blake
Spencer Blim
Warren Blim
Ed. S. Blaine
George E. Baxter
James Barnes
Frank L. Brown
S. S. Barat
A. G. Bosler
Arpad M. Barothy
F. E. Buechner
L. B. Bell
F. A. Berry
O. Brooks
Nathan Bulkley
H. H. Beil
Frank Brawley
B. H. Burgner
Fredk. L. Barbour
M. L. Blatt
J. R. Ballinger
Alfred S. Bailey
Marian S. Bougher
Ione F. Beem
Julius Buzik
A. E. Brucker
Wm. E. Buehler
H. T. Bruning
M. P. Borovsky
C. V. Bachelle
A. Milton Cox
W. W. Coen
A. Christenson
C. J. Challenger
E. L. Cornell
M. R. Chase
Haldor Carlsen
F. E. Cunningham
S. B. Conger
Edgar W. Crass
Frank J. Corper
C. D. Collins
Harry Culver
M. D. Chase
W. L. Callaway
Alphon L. Cornet
J. S. Cleland
L. M. Czaja
J. C. Clark
F. Chauvet
I. H. Cutler
Harry Culver
B. C. Corbus
S. H. Champlin
R. C. Collins
Eugene Chaney
B. A. Camfield
F. G. Carls
L. M. Culver
H. B. Donaldson
Jos. B. DeLee
W. J. Dvorak
A. F. Doerann
A. E. Dennison
Jos. A. Dittmore
Carl A. Dragstedt
W. C. Danforth
T. A. Daly
Guy C. Duff
O. J. Dewitz
H. J. Dern
Edw. J. Devine
E. J. Doering
C. A. Earle
A. E. Ellison
Dan'l N. Eistendrath
M. Evertz
Solomon Eisensteadt
H. Wm. Elghammer
John Fisher
G. C. Fouser
R. R. Ferguson
Louis H. Friedrich
Frederick G. Fox
F. A. Fisher
Louis Faulkner
Anders Frick
J. V. Fowler
A. W. Freese
Wm. R. Fletcher
F. J. Fara
J. Fisher
Thomas P. Foley
Richard Fyfe
F. O. Frederickson
R. L. French
R. H. Freeman
J. P. Fitzgerald
A. W. Gregg
I. C. Gary
M. A. Glatt
John J. Gill
F. L. Glenn
Robert E. Graves
E. H. M. Griffith
P. F. Gates
John Phillips Gibbs
A. Goldspohn
W. W. Gourley
John F. Golden
J. Graybeal
Ascher C. Goldfine
I. J. K. Golden
Benj. Goldberg
G. W. Good
S. H. Grove
T. J. H. Gorrell
H. J. Gahagen
H. W. Gray
C. F. Goetzinger
E. W. Gardner
S. Gardner
A. H. Geiger
John R. Harger

W. H. Hillemeyer
F. A. Hill
J. S. Hunt
Fred. D. Hollenbeck
A. W. Haeffner
D. H. Howell
J. H. Hutton
Robt. H. Hayes
F. P. Hammond
B. Hendrickson
M. J. Hubeny
O. C. Huber
E. C. Holmblad
Frank Heda
W. C. Hammond
C. N. Hopkins
Frank F. Hoffman
M. O. Heckard
F. Herb
R. F. Hinman
George H. Hansen
A. A. Hayden
P. E. Hopkins
W. K. Harrlson
G. J. Hagens
D. J. Holinger
E. D. Howland
C. A. Haines
W. Hessert
Dawson Hall
Reid Owen Howser
R. M. Hutchinson
James Heydanek
Chas. E. Humiston
O. Hawkinson
W. J. Hurley
G. Hoffman
David L. Holland
B. T. Hoffman
M. L. Harris
J. Holinger
T. E. Haines
W. S. Haines
Charles Hill
J. E. Irish
Ludwig Ilse
H. E. Irish
J. Ireland
H. Isaacs
Edmund Jacobson
Aug. Jacobson
L. B. Joslyn
Warren Johnson
R. A. Jeths
Frank J. Jirka
H. Curtis Johnson
Lester Johnson
R. T. Jones
F. D. John
A. R. Johstone
Herbert L. Jordan
H. L. Kretchmer
J. F. Konapa
M. J. Kearsley
Charles E. Kahlke
Emmet Keating
F. L. Knapp
F. J. Kaster
W. Kozakiewicz
Gerard W. Krost
S. Krumholz
A. Krueger
Thomas N. Kelly
A. C. King
John D. Kales
C. B. King
J. C. Kafft
R. A. Laing
Francis Lane
C. W. Leigh
Ed Luehr
D. R. Landau
R. A. Le Tourneau
A. E. Luckhardt
E. A. Lutton
I. S. Louis
H. O. Lussky
Effie L. Lobdell

R. C. Libberton
G. M. Loewe
J. R. Lend
A. W. Lakemeyer
Henry G. Lescher
J. R. Lavleri
J. J. Lebowitz
J. G. M. Luttenberger
P. B. Magnuson
Paul E. Morf
P. McPherson
E. B. Moss
Chas. R. Moore
S. J. McNeill
C. J. McMullen
Hugh MacDonald
Nels S. Meling
Edward Maginnis
Fred. H. Muller
Hugh McKenna
J. M. Mitchell
Walter B. Metcalf
E. B. Merrill
E. P. S. Miller
J. T. Meyer
Jacob Myers
W. E. Miller
John A. McHugh
G. A. Miller
A. R. Metz
Frank R. Maurer
G. Henry Mundt
W. E. Morgan
L. Maywit
E. W. Mueller
Carl A. Meyer
V. F. Masilko
G. L. McWhorter
G. P. Miller
Frank G. Murphy
Frederick E. Munch
A. M. Moore
E. E. Moore
S. B. McLeod
H. N. MacKechnie
L. L. McArthur
Geo. H. Musselman
Frank J. Novak
O. E. Nadeau
J. S. Nagel
Ed. Ochsner
A. J. Ochsner
Albert M. Oyen
G. L. Otroskey
H. G. Ohls
G. G. O'Brien
W. S. Orth
John T. O'Connell
H. D. Orr
W. J. Pickett
John L. Porter
A. J. Prominski
L. B. Phelps
Thos. J. Peterson
Joseph M. Patton
M. Penchina
S. C. Plummer
Brown Pusey
R. M. Phillips
John Pflock
R. W. Peterson
W. A. Pusey
Carl R. Peterson
N. M. Percy
Edward Patera
J. Thomas Pickerill
S. F. Przygocki
P. G. Puterbaugh
Joseph Prendergast
E. M. Pohl
John F. M. Porter
W. A. Plice
Charles H. Phifer
Frank J. Pokerney
J. F. Quirk
Harold A. Rosenbaum
M. M. Ritter
E. W. Ryerson

C. F. Roan
W. A. Ribbeck
H. H. Ritenhouse
J. B. Ross
J. W. Russell
G. L. Rulifson
Geo. W. Rezanka
Anthony Rud
J. E. Rowan
E. E. Reininger
Frank J. Resch
R. L. Reynolds
Nils Remmen
Sol Rosenblatt
L. W. Rosenbaum
T. E. Roberts
Harold H. Roberts
John A. Robison
C. C. Rentfro
H. A. Ramser
O. T. Roberg
E. Ries
L. C. Schulze
M. J. Sullivan
A. W. Stillians
V. L. Sheets
Alva S. Sawyer
I. F. Stein
Otto L. Schmidt
Charles E. Scharf
Edward F. Slavik
Philo F. Snyder
Sylvia A. Sciarretta
W. F. Scott
W. G. Stearns
Joseph Semerak
Vesper Shaffer
C. B. Semerak
Robert Sonnenschein
Andra L. Stapler
C. O. Schenider
E. S. Stewart
Carl G. Swanson
H. J. Stewart
Charles P. Schell
V. A. Simpkus
Arthur Sanders
Grant W. Sill
A. M. Stobe
Wm. J. Siegler
Frank Smithies
John J. Stoll
A. C. Strunk
Carl F. Steinhoff
F. H. Steinhoff
H. J. Smejkal
Chas. L. Schmidt
F. E. Simpson
A. M. Shaw
Elmer E. Simpson
Chas. A. Stevens
A. W. Stillians
L. Ernest Schwarz
C. K. Stulik
M. J. Seifert
Hugh R. Schofield
Bertram W. Sippy
C. Pruyn Stringfield

F. S. Selby
R. C. Steffen
Samuel Stein
Charles E. Sceleth
A. E. Stewart
Samuel Salinger
F. H. Schroeder
A. W. Seidel
B. D. Satek
H. Schmitz
A. F. Stevenson
C. E. Stanbury
I. Trostler
E. D. Tallman
F. P. Thompson
E. E. Tansey
John W. Tope
John J. Theobald
G. D. Theobald
H. M. Thometz
Frank F. Trombly
W. M. Thomas
Geo. F. Thompson
Max Thorek
L. L. Turner
H. Tetrev
F. D. Vreeland
W. VanHook
B. L. Vilna
Walter Verity
R. Von der Heydt
S. A. Waterman
D. H. Wherritt
S. S. Winner
S. L. Weber
Joseph A. Waska
Will Walter
J. H. Walsh
E. W. Westland
John A. Wesener
Charles Windmueller
H. L. Wallin
H. A. Ware
B. E. Walpert
M. S. Wien
J. T. Woof
Theo. B. Wood
G. V. Wyland
S. H. Waterman
T. G. Wallin
Geo. W. Webster
A. A. Whamond
H. Woehlk
E. Weber
C. J. Whalen
K. N. Wakeberg
F. F. Wisniewski
T. M. Wiersen
T. J. Williams
H. J. Way
C. F. Yerger
A. Yuska
T. Z. Xelowski
H. Zaczeck
O. Zealezny
Lucius H. Zeuch
Joseph Zabokrtsky

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Make Checks Payable to the Illinois State Medical Society.

Name.....M. D.
Street .....
City .....County .....

"Sign the above pledge card, make out a check payable to the Illinois State Medical Society and mail both in an envelope as follows:

From .....

ILLINOIS STATE MEDICAL SOCIETY,
c/o Cashier, Sheridan Trust & Savings Bank,
4738 Broadway,
Chicago, Illinois."

Lay Publicity Committee, 25 E. Washington St.

CHICAGO MEDICAL SOCIETY OFFICIAL SPECIAL TRAIN

To the A. M. A. Convention, San Francisco, Calif., June, 1923

To Members, Chicago Medical Society:

Special Train (Schedule No. 1)—Arrangements have been completed with the Chicago & North Western Ry., Union Pacific System, Denver & Rio Grande Western and Western Pacific R. R. for an Official Special Train, Chicago to San Francisco, to accommodate members attending the A. M. A. Convention. Our special train will leave the Chicago passenger terminal, C. & N. W. Ry., 11:30 P. M. Thursday, June 21, via the schedule shown on the attached itinerary, resignated Schedule No. 1, and will arrive San Francisco 5:45 P. M. Monday, June 25. The schedule has been carefully arranged so that practically all the principal scenic points of interest, including Denver, Colorado Springs, Pueblo, the famous Royal Gorge, Salt Lake City, the renowned canyon of the Feather River, as well as California's beautiful capital, Sacramenta, will be passed during the daytime.

The special train will be composed of the highest class, electric-lighted, all-steel equipment, consisting of head-end buffet car, compartment drawing room, and open-section standard sleeping cars, dining cars and full observation-lounging car. Specially arranged dining car service will also be provided upon a la carte or table d'hote basis, to be announced later.

Schedule No. 2 (One Day Later from Chicago)—For accommodation of members who will be unable to leave with the official special train party June 21, or who desire to reach San Francisco via the shortest and most direct route, arrangements have also been completed with the Chicago & North Western, Union Pacific and Southern Pacific for *special sleeping cars* on the San Francisco Overland Limited leaving the Chicago passenger terminal, C. & N. W. Ry., 8:10 P. M. Friday, June 22, arriving San Francisco 2:30 P. M. Monday, June 25.

Railrood Fares—Summer excursion low rate of $86 will apply from Chicago to San Francisco and Los Angeles and return, with correspondingly low rates from other points. These tickets will permit passengers to return via a different route and stop-overs will be allowed at all points en route in either direction within the final limit, which will be October 31, 1923. For tickets returning via Portland, Seattle or north Pacific coast points, the summer excursion rate will be $104.

Sleeping Car Fares—Regular Pullman fares, Chicago to San Francisco, will apply via either special train schedule No. 1 or schedule No. 2 as follows: Lower berth $23.63, upper berth $18.90, drawing room $84, compartment $66.75. A minimum of two adult tickets, or the equivalent thereof, is required for the occupancy of a drawing room or compartment.

Reservotions—In order that desirable accommodations may be secured and a sufficient number of sleeping cars arranged, will you kindly advise Mr. H. G. Van Winkle, General Agent, C. & N. W. Ry., 148 South Clark St., Chicago, on the enclosed coupon, just what sleeping car space you desire, together with number in your party. Your request will be promptly acknowledged and given careful attention.

Yours truly,
R. R. Ferguson., M. D., Secretary.

Schedule No. 1—Official Special Train:

June 21, leave Chicago, 11:30 P. M., Chicago & North Western Ry

June 22, arrive Omaha, 3:00 P. M., Chicago & North Western Ry.

June 22, leave Omaha, 3:30 P. M., Union Pacific.

June 23, arrive Denver, 7:30 A. M., Union Pacific.

June 23, leave Denver, 8:15 A. M., D. & R. G. W.

June 23, arrive Colorado Springs, 10:53 A. M., D. & R. G. W.

June 23, arrive Royal Gorge, 1:50 P. M., D. & R. G. W.

June 24, arrive Salt Lake City, 12:25 P. M. (Mt.), D. & R. G. W.

June 24, leave Salt Lake City, 11:40 A. M. (Pt.), Western Pacific.

June 25, arrive Sacramento, 12:40 P. M., Western Pacific.

June 25, arrive San Francisco, 5.45 P. M., Western Pacific.

Schedule No. 2—San Francisco Overland Limited Route:

June 22, leave Chicago, 8:10 P. M., Chicago & North Western Ry.

June 23, arrive Omaha, 9:30 A. M., Chicago & North Western Ry.

June 23, leave Omaha, 9:45 A. M., Union Pacific.

June 24, arrive Ogden, 2:00 P. M. (Mt.), Union Pacific.

June 24, leave Ogden, 1:20 P. M. (Pt.), Southern Pacific.

June 25, arrive San Francisco, 2:30 P. M., Southern Pacific.

Enroute *A. M. A. Convention, San Francisco Sleeping Car Fares (Either Schedule):*

Lower berth $23.63, upper berth $18.90, section $42.53, compartment $66.75, drawing room $84.

.....1923

CHICAGO MEDICAL SOCIETY

Enroute *A. M. A. Convention, San Francisco*

H. G. Van Winkle, Gen. Agt., C. & N. W. Ry., 148 S. Clark St., Chicago, Illinois.

Schedule No. 1.

I desire to leave Chicago on Official Special Train 11:30 P. M., June 21, traveling via C. & N. W., Union Pacific, D. & R. G. W. and Western Pacific. Please reserve in my name .... lower berths, ... upper berths, ... sections, ...compartments, ... drawing room, advising me promptly space assigned.

NAME .....

ADDRESS .....

Number in party.....

Schedule No. 2

I desire to leave Chicago with Special Party 8:10 P. M., June 22, traveling via C. & N. W., Union Pacific and Southern Pacific, "San Francisco Overland Limited" direct route. Please reserve in my name .... lower berths, ... upper berths, ... sections, ... compartments, ... drawing room, advising me promptly space assigned.

NAME .....

ADDRESS .....

Number in party.....

SANTA FE CHICAGO SPECIAL

The Santa Fe Railroad will run a train, to be called the "American Medical Special," which will leave Chicago at 8:15 P. M., June 16. Short stopovers will be made at Kansas City, Colorado Springs, Santa Fe and Albuquerque. The day of June 20 will be spent at the Grand Canyon. This train is due in Los Angeles at 3:30 P. M., June 21. From Los Angeles, choice may be made of rail or boat service to San Francisco. Detailed information may be obtained from J. R. Moriarty, Division Passenger Agent, A. T. & S. F. Ry., 179 West Jackson Street, Chicago.

SIDE TRIPS FROM SAN FRANCISCO

Dr. W. E. Musgrave, chairman of the Local Committee of Arrangements at San Francisco, has submitted information concerning tours which may be taken, with San Francisco as a starting point, after the annual session:

A three weeks' trip to Honolulu on a special boat, touching all principal ports, including the leper colony, and return to San Francisco.

A trip up the western coast to Alaska and return. Those desiring to do so may leave the boat at Vancouver and return east over the Canadian Pacific, or at Seattle and return east over the Great Northern, or at Portland and then east over any available line. Returning to San Francisco, those who take this coast trip may return east by way of Los Angeles or the Panama Canal.

An oriental tour beginning at San Francisco, and leaving that city a day or two after the close of the annual session. Such tours will include Japan, China and the Philippine Islands and return to San Francisco, or a return by way of the Suez Canal and Europe.

A trip to Honolulu, with six days in that city and on the Island of Oahu, and two days in Hilo and the Kilauea National Park, with a visit by day and by night to the active volcano of Kilauea.

An Alaskan tour, embracing a twenty-four day cruise. Stops will be made at Ketchikan, Wrangell, Petersburg, Taku Glacier and Juneau. At Skagway a railroad trip to Bennett Station will be begun; returning, the boat will proceed to Sitka, from which place six days will be spent in the inside passage en route to Seattle. From Seattle a four days' trip to Rainier National Park will be made.

A tour which includes visits to Yellowstone, Glacier and Rainier national parks.

A comprehensive tour that will take four weeks for sight-seeing in the Canadian Rockies.

Inquiries concerning transportation from eastern ports to San Francisco by way of the Panama Canal should be referred to steamship offices. It will be possible for those who wish to go to San Francisco by way of the Panama Canal to return by railroad.

For further information regarding side trips, address Chairman, Committee of Arrangements, 806 Balboa Building, San Francisco.

THE SAN FRANCISCO SESSION

RATES AND ROUTES OF TRANSPORTATION TO SAN FRANCISCO AND RETURN

The American Medical Association is advised that effective May 15 and daily thereafter until September 30, western railways will place on sale round trip tickets to San Francisco with a return limit of October 31. These tickets will permit stopovers at any point on the going or return trip merely by informing the conductor at which points passengers desire to stop. Rates from the cities named are:

From Chicago	$86.00
From Kansas City	72.00
From St. Louis	81.50

From Omaha 72.00
From St. Paul 87.50

Pullman rates from Chicago are:

Lower berth, Chicago to San Francisco..$23.63
Upper berth, Chicago to San Francisco.. 18.90
Compartment, Chicago to San Francisco. 66.75
Drawing room, Chicago to San Francisco 84.00

If stopovers are made on the outward trip, a small additional sum is to be added to the Pullman rates quoted.

Lines east of Chicago made low rates to the Pacific Coast and return in the summer of 1922, and it is thought that such rates will be announced for the summer of 1923.

Those who go to San Francisco from Chicago have the choice of a large number of routes, some of which are as follows:

1. C., B. & Q. Railroad to Denver; D. & R. G. W. Railroad to Salt Lake; Western Pacific or Southern Pacific Railroad to San Franciso.

2. Rock Island Railroad to Denver; D. & R. G. W. Railroad to Salt Lake; Western Pacific or Southern Pacific Railroad to San Francisco.

3. C. & N. W. Railroad to Omaha; Union Pacific Railroad to Ogden; Western Pacific or Southern Pacific Railroad to San Francisco.

4. C., B. & Q. Railroad to Denver; Union Pacific to Ogden or Salt Lake; Western Pacific or Southern Pacific Railroad to San Francisco.

5. C., B. & Q., Rock Island, or C. & N. W. and Union Pacific Railroad to Denver; D. & R. G. W. or Union Pacific Railroad to Salt Lake; Union Pacific to Los Angeles; Southern Pacific to San Francisco.

6. Santa Fe Railroad to Los Angeles; Southern Pacific Railroad to San Francisco.

7. Rock Island Railroad to El Paso; Southern Pacific Railroad to Los Angeles; Southern Pacific Railroad to San Francisco.

8. I. C. Railroad to New Orleans; Southern Pacific Railroad to Los Angeles; Southern Pacific Railroad to San Francisco.

Going by any of the above named routes, passengers may return the same way or by any of the following routes, without additional charge:

1. Southern Pacific Railroad to Los Angeles; Santa Fe (Grand Canyon Route) to Chicago.

2. Southern Pacific Railroad to Los Angeles and El Paso; Rock Island Railroad to Chicago.

3. Southern Pacific Railroad to Los Angeles; Southern Pacific to New Orleans; I. C. Railroad to Chicago.

4. Southern Pacific Railroad to Los Angeles; Union Pacific to Salt Lake; D. & R. G. W. Railroad to Denver; C., B. & Q., Rock Island Railroad or any direct line to Chicago.

5. Southern Pacific Railroad to Los Angeles; Union Pacific to Salt Lake; D. & R. G. W. Railroad to Denver; C., B. & Q., Rock Island or any direct line to Chicago.

5. Southern Pacific to Los Angeles; Union Pacific Railroad to Ogden; Union Pacific to Omaha; C., B. & Q., C. & N. W. or C. M. & St. P. Railroad to Chicago.

6. Southern Pacific Railroad to Los Angeles; Santa Fe (Grand Canyon Route) to Denver; any line to Chicago.

Those who wish to return from San Francisco by way of Portland, Seattle and the North Pacific Coast will be required to pay $18 additional to the rates quoted, and tickets may be secured to read returning from San Francisco by the following routes:

1. Southern Pacific Railroad, San Francisco to Portland; Northern Pacific (Yellowstone Park Route) to St. Paul; any line to Chicago.

2. Southern Pacific Railroad, San Francisco to Portland; Great Northern (Glacier Park Route) to St. Paul; any line to Chicago.

3. Southern Pacific Railroad, San Francisco to Portland, S. P. & S. Railway to Spokane (Columbia River Route); Northern Pacific or Great Northern to St. Paul; any line to Chicago.

4. Southern Pacific to Portland; Northern Pacific, Great Northern or Union Pacific Railroad to Seattle; Great Northern or Canadian Pacific Steamship Company to Vancouver; Canadian Pacific Railroad to St. Paul; any line to Chicago.

5. Southern Pacific Railroad, San Francisco to Portland; Union Pacific Railroad to Ogden or Omaha; any line to Chicago.

6. Southern Pacific Railroad, San Francisco to Portland; Union Pacific Railroad to Salt Lake; D. & R. G. W. Railroad to Denver; any line to Chicago.

Any who wish to go to San Francisco and then to Los Angeles and return to San Francisco, Portland, Seattle and North Pacific Coast points will be required to pay $11.40 additional, besides the $18 required for the return trip by the northern routes.

AN INVITATION FROM THE NEW MEXICO MEDICAL SOCIETY

The annual meeting of the New Mexico Medical Society will be held in Albuquerque, June 19-21. The local committee of arrangements for that meeting and the secretary of the New Mexicco Medical Society cordially invite Fellows of the American Medical Association going to the annual session in San Francisco to stop over at Albuquerque. Entertainment will be provided for them by the local committee of arrangements and the chamber of commerce of Albuquerque. Parties on special trains en route to San Francisco are invited to arrange their schedules so that at least one day may be spent at Albuquerque. Dr. J. W. Elder, secretary of the New Mexico Medical Society, extends for that society an invitation to the members and Fellows of the American Medical Association to spend as much time as can be arranged at Albuquerque during the meeting of his state medical society.

THE "MEDICAL SPECIAL DE LUXE"

The Harlan Tours, 202 South State Street, Chicago, will operate a special train to be known as the "Medical Special De Luxe," which will leave Chicago on the evening of June 16 and Minneapolis over the Soo Line on the morning of June 17. Special Pullman cars will be operated from Des Moines, St. Louis and Omaha, and will be attached to the special at St. Paul. Stops will be made at Banff, Lake Louise and Glacier in the Canadian Rockies, and interesting side trips have been arranged. Other stops will include Victoria, Seattle and Portland. One full day is to be spent on a steamer between Vancouver and Seattle, while at Portland the famous Columbia River Highway trip is planned. This train will arrive in San Francisco on Monday, June 25, but any members of the House of Delegates who may be on board will reach San Francisco on Sunday evening, June 24. Two return routes are offered, one overland direct, and the other leaving San Francisco on Friday, June 29, by way of the Big Trees, Santa Cruz, Del Monte, Santa Barbara, Los Angeles, Pasadena, Catalina Island, Salt Lake City, the Grand Canyon of the Arkansas, the Royal Gorge and Colorado Springs. In addition to this special train, the Harlan Tours will operate special cars overland direct to San Francisco, and tours by way of the Canadian Rockies and the Shasta Route, which will arrive in San Francisco before the beginning of the session. Reservations, information as to rates and schedules, and descriptive matter may be secured by addressing the Harlan Tours, 202 South State Street, Chicago, or L. H. McCormick, General Agent of the Rock Island Lines, Chicago.

MEDICINE AS AN ART GIVING WAY TO MEDICINE AS A SCIENCE—THE VANISHING FAMILY DOCTOR

The following editorial printed recently in the *Chicago Daily News* shows that the laity are at last beginning to realize the seriousness from the public welfare standpoint of the vanishing family doctor.

Medicine as an art seems to be giving way too rapidly and too completely to medicine as a science. As specialists in throat, lungs, liver and what not become more numerous, the old-fashioned family doctor, the bedside practitioner, becomes harder and harder to find.

During a recent epidemic of influenza in a university town not far from Chicago it developed, according to one of the victims of the prevailing malady, that, though the town contained a university hospital, a medical faculty and many specialists who do only an office practice, there were only two physicians who made house calls in the old-fashioned way. One of them fell a victim to the disease that he had been treating, and then the other found it possible to visit only a small proportion of the patients who desired his services.

Medicine as an art, according to Dr. Bardeen, dean of the medical school of the University of Wisconsin, who addressed the annual congress on medical education in Chicago yesterday, deals with human beings and requires sympathetic understanding. It is the art practiced by the old-style family doctor who answers the calls of his patients, ready to undertake the diagnosis and treatment of any sort of illness he may find, to minister at once to the sufferer's comfort, allay his fears and reestablish his confidence.

In these days of specialization too few medical students go into training for that sort of career. Too many of them want to be specialists. There is need for medical specialists, of course, but the world has not yet advanced to that point where it can diagnose its own ills and take them to the right specialist. The family doctor is still a necessity. There are many ailments that do not require a specialist's attention and many patients who because of lack of means or for other causes cannot be taken to hospitals or to specialists' offices, but must be treated at the bedside in their own homes.

The medical schools should see to it that more men are educated for that sort of service.

FEW THERE ARE WHO TOIL ALONE FOR GLORY—THE SQUABBLE ABOUT TRAINED NURSES THROWS A NEW PICTURE ON THE SCREEN

The following from the *Chicago Daily News* is worthy of reproduction. It gives a new viewpoint from the layman's standpoint and is reproduced as showing the more recent trend of the times.

Neither Doctor Nor Nurse Nor Butcher Nor Tailor Is Philanthropist

This squabble about trained nurses throws a great picture upon the screen.

Dr. Norris intimates they work rather for the money than for glory.

Take a census of other occupations, and how many of them can you classify under the glory tag? asks "Girard" in the *Philadelphia Inquirer*.

How many doctors, when they began, had the general uplift of mankind in their thoughts, compared with those who believed it was a good profession in which to earn a living?

Of the 10,000 Pennsylvania lawyers, how many started with the ambition alone of setting wrongs right, regardless of fees?

To make your clothes is as essentially a thing as to nurse your body. Are tailors inspired by a consuming desire to benefit their customers, or do they usually send you a bill for the suit?

Fuel is surely a necessity. Have you read of a convention of miners who resolved to let wages go hang while they dug coal for the glory of heating a cold world?

Or do operators say, forget dividends; just give the people coal. Glory is enough for us?

BUTCHER WOULD ASTONISH CUSTOMER

"What a queer world this would be," sang the lady to Reuben, "if all the men should be transported far beyond the northern sea."

Queerer still if the butcher who supplied your steak should say:

"No charge, madam. I'm doing this for the satisfaction of keeping you alive, for unless you eat, you die."

A home is the first necessity, after food, and why not expect the bricklayers, masons, plasterers and carpenters to forget their ten or eighteen per and put a roof over your head as a little benevolent enterprise of their own.

Michael Angelo doubtless was inspired while building St. Peter's cathedral, but he didn't, as the records show, neglect to make a fortune out of it, as well as immortal fame.

A great many folks work by spurts, doing little chores for charity, but those who work all the time are more easily counted.

TEACHING AFFORDS GOOD LIVING

"Why do people teach school?" I asked that splendid teacher, Dr. George M. Philips of West Chester.

"Nine out of ten," said he, "come to our Normal school because they think teaching offers them a good living with pleasant occupation. There are few teaching martyrs."

A prominent Philadelphia clergyman to whom I put a similar question last week replied:

"The pay of ministers is now much better, especially in the large cities, than it was when I was a boy. I fear many young men seek a good livelihood in the pulpit."

Foreign missionaries would, I suspect, come in the glory pay classification. They get no money to speak of, few comforts, hard work and few worldly pleasures.

In rendering his bill for services done, the true missionary subtracts heavily from your debt for the mere sake of his calling.

Gilbert Stuart called the replicas of his fine Washington portrait his "hundred dollar bills."

Even Raphael's Madonnas made him a rich man, so that he was not working wholly for immortality.

It is the fashion to paint Florence Nightingale as a frail nurse, who revolutionized army hospitals by her winsomeness. Quite the contrary. She was in easy financial standing, a superb organizer, and had a will quite as hard to bend as a two-inch rod of steel.

She made herself boss of the Crimean hospitals by her forceful demands. No milk-sop methods for her.

Big physically, she cut British army red tape with ruthless hand.

PAY PHYSICIANS SALARIES EQUAL TO THOSE OF BRICKLAYERS AND CARPENTERS

The following editorial from the *Chicago Journal* of February 16 shows a lay person's attitude towards the proper compensation for medical men.

Speaking of the shortage of medical attendants at insane hospitals, the head of Northwestern University medical school said:

"Pay physicians salaries equal to those of bricklayers and carpenters and our state institutions for the insane will have no trouble in finding doctors to serve on their medical staffs."

That remark brings up in striking form the question of skilled services. Civilization must have engineers, architects, doctors, dentists and teachers —the list might be extended very much, but that is enough for the time. Those professions require long and expensive training, while a common school education is a sufficient start in the manual trades.

Suppose two boys finish common school at the same age; one decides to be a doctor and the other a carpenter. The latter has a short apprenticeship, during which he is earning some money all the time, and never under expense. The other lad has at least ten years of schooling—high school, college, medical school and hospital—all under heavy expense, before he is able to earn a dollar at his chosen profession. Yet, according to the head of a university medical department, the state pays carpenters more than it does doctors to care for the insane!

Such a condition does not help society to get those skilled services which it must have or go back to a much ruder and less comfortable way of life. People may differ as to what the remedy should be; there can be no rational doubt that a remedy is needed.

THE LAY PRESS A MENACE IN MATTERS MEDICAL

Admitting at the outset that many good things appear in the lay press in the form of advice to the public, warnings of the bad and dangerous, does not overshadow the fact that untold damage has been and is being done by publications by alleged "authorities" dealing with matters, which even trained physicians find difficult of interpretation. Of all the publications in the country, perhaps the most flagrant violator of

good sense in this respect is Hearst's Magazine. Almost, yes without exception, articles dealing with public health, medical and infectious disease problems for many years past have been the product of men unknown to the medical profession, not occupying that place of respect as to ability the producer of sermons to the public on these intricate matters should occupy. The latest mess dished up for the consumption of the avid reader of trash is from the pen of one Paul De Kruiff. A fair sample of its disregard of the facts may be appreciated from his statement that Sherman's Vaccines are "fake vaccines," that mostly the uninformed, careless and misguided physicians use vaccines. The damage such statements may do when made to those unable to discriminate in such technical matters is obvious. However, there seems to be little or no use to complain as to the attitude of Hearst's in these dangerous practices. This is the same publication that widely lauded a fake cancer cure and many other sensational matters of similar questionable repute years ago. To this good day not a line attempting to undo the damage those publications did has ever appeared so far as the writer is aware.

The phase we are unable to get around in considering the matter, is what possible good can a discussion of intricate laboratory and technical matters do the average reader, the reader of the type finding it more than difficult to handle the intricacies of his own daily problems or calling. The place to educate the doctor if he is in error, is certainly not to be found in the columns of a monthly sensational sheet of the type of which we complain.—Journal Oklahoma State Medical Assn., March, 1923.

CHIROPRACTIC BILL KILLED IN SOUTH CAROLINA

After a long and stormy debate the chiropractic bill was finally killed in the South Carolina House of Representatives. The final vote was 65 to 46 against the bill. It is stated that the action of the House was considered a hard blow for chiropractic. This recalls our fight in Georgia in 1920 and 1921 and impresses the fact that had we been more alert, steadfast and aggressive we might have written a different chapter in our history. Dissension and willingness to compromise and trade by some on whom we had placed our chief reliance was the cause of the blot on our noble state. What South Carolina has done Georgia might have done.

THE SAN FRANCISCO SESSION

Invitation From the Oregon State Medical Society

The board of councilors and members of the Oregon State Medical Society, through the secretary, Dr. Otis B. Wight, extended a cordial invitation to Fellows and members of the American Medical Association who go to San Francisco on special trains to stop at Portland and be the guests of the Oregon State Medical Society during a day's excursion up the Columbia River Highway. The trip will require at least three hours each way, allowing time for dinner. Special trains arriving in Portland in the morning or by early afternoon will be met by members of the Oregon State Medical Society, and automobiles will be available for their accommodation. The return to the trains will be in time for their departure at any time in the evening after 10:30.

No More Accommodations Available on New York Special

The train for the special twenty-five day tour from New York City to the meeting of the American Medical Association in San Francisco arranged for under the auspices of the Medical Society of the State of New York is already completely filled. Another train will be arranged for if 125 more subscribers can be secured. It will be necessary for applications for accommodations to be in not later than April 15. Applications should be sent to Mr. J. S. McAndrew, Tour Manager, Lifsey Tours, Inc., 1472 Broadway, New York, N. Y.

Edward Livingston Hunt,
Secretary, Medical Society of
the State of New York.

Post Convention Tour to Hawaii

In connection with the telegraphic invitation extended by Hon. Wallace R. Farrington, governor of Hawaii, as published in The Journal, March 10, the following comprehensive tour has been arranged:

Leaving San Francisco, night of June 29, the party will sail from Los Angeles, June 30, on the Calawaii. Visit to live volcano at Kilauea. Automobile drives round Honolulu and the isand of Oahu. Reception by Governor Farrington. Visits to Kalihi leper receiving station and hospitals. Returning, arriving at Los Angeles, July 21. Total inclusive cost from Los Angeles back to Los Angeles, $415. Reservations and booklets may be obtained from Fred J. Halton, 714 Marquette Building, Chicago, former Secretary, Hawaii Tourist Bureau, who will personally escort the party to Hawaii.

IN THE HAMMOCK

Beth and I in the hammock swung;
  June was sobbing its life away—
Dew, like tears, from each grass-point hung,
  And up in bent boughs, to greet the day
A wee bird sang this strain to me:
"Love lingereth through eternity."

"All these round little words of dew
  Disappear when the sun mounts high;
So will this world that cradled you
  Sink in the stream of Time and die.
What shall it matter to you or me
Love is the child of eternity."

Widely opening her languid eyes,
  Beth looked laughingly at my own;
Was it a glance of sweet surprise
  At finding how luminous life had grown?
"Why not love me now," said she,
"It's so long to wait for eternity!"

—William Haskell Simpson.

Original Articles

THE MAJOR INFECTIONS*

William J. Mayo, M. D.
ROCHESTER, MINN.

The four major infections, syphilis, tuberculosis, cancer, and sepsis have many points in common. They are all introduced into the body through its surface, and, with the exception of carcinoma their causative agents are identifiable. That carcinoma is caused by a specific organism, there is much reason to doubt, but that it arises on the surface of the body and penetrates through the protective coverings to attack the nonepithelial constituent as well as the epithelial is assured. Bacteria, which Vaughan believes to be neither animal nor vegetable, but organisms lying between, and which are responsible for tuberculosis and sepsis, are more resistant than the body tissues of the host to poisonous agents, which would cause their destruction. One of the main reasons for believing that the spirochete may belong to the protozoal group rather than to the bacterial lies in the fact that it is like all the protozoa, for example the plasmodium of malaria, responsive to specific medication without injury to its host.

These four infections have another and very important feature in common. They not only work directly on the tissues, but they infect the lymphatics. As Cohnheim pointed out more than forty years ago, if the sentinel gland, that is, the one first involved, can be located, the origin of the disease in the external defensive mechanism can be ascertained. When the causative noxious agents enter the blood-stream they may be carried to situations where the defensive powers of the animal organism may completely overcome them. While this is equally true of the lymphatics, the defensive process is much slower and the lymphatic glands themselves often become involved and act as secondary sources of infection. Whether the infection is picked up by the blood-stream or by the lymphatics is largely determined by physical factors. The blood capillaries pick up watery molecular solutions to which their walls are permeable, but the colloid particles are too large to pass through the walls of the capillaries, and are carried into the lymphatics through the agency of the endothelial cells, which become phagocytes.

The lymphatics undertake the removal and the destruction of particles too large to penetrate the walls of the capillaries. For instance, on the under surface of the diaphragm particles of carmine, microscopically visible, have been seen to enter the lymphatics and pass to the thoracic glands. The resistance developed by the lymphatics varies in different persons and with different forms of infection. The process is accompanied by increased vascularization, phagocytosis, and the development of connective tissue which contracts until it cuts off the nutrition of the contained organisms. The latent phase of these contained organisms, especially spirochetes, the bacilli of tuberculosis, and the cancer cell, may be prolonged, resulting in renewed activity after many years, due to a breaking down of the lymphatic barriers from injury or intercurrent disease.

The reactions of the four infections, one on another, when in combination, which occurs not infrequently, are disastrous. The syphilitic patient may die from terminal tuberculosis. The leukoplakia buccalis of syphilitic origin leads to chronic septic irritation in which may develop carcinoma. Sepsis is a common and unfortunate secondary infection in syphilis, tuberculosis, and cancer, causing great distress to the patient and shortening of life. Sepsis is also a factor in the visibility of the manifestations of tuberculosis, cancer, and especially syphilis. Persons of cleanly habits may have little or none of the hardness in the base of the chancre which is due to sepsis, and the secondary manifestations of syphilis in the clean may be extremely mild. The unclean are more likely to have prominent display of primary and secondary syphilitic lesions, according to Corner, with consequent early diagnosis, and the advantage of early treatment lies with them. Patients with tuberculosis seldom die from the disease itself, except in the presence of meningitis when the inflammatory products of the specific infection are under pressure. The large majority of tuberculous patients die from the associated sepsis. In carcinoma of the internal organs the course of the disease may run with little or no pain because of the absence of sepsis, in marked contrast with the open septic conditions of external cancers, which explains the common conception of the

*Read before Tri-State District Medical Association, at Peoria, Oct. 31, 1922.

laity that death from cancer means being eaten alive.

The question of immunity to the four plagues is an interesting speculation, of which we have no proof. In the sense of the actual causative agents of these plagues passing from mother to child, the spirochete only can pass through the placenta, but it would appear that certain persons have inherited or acquired more than average resistance to the causes of tuberculosis, carcinoma, or sepsis, or in some way present unfavorable conditions to the harboring or growth of the various infections.

SYPHILIS

"Unto the second and third generations"; how true is this old prophecy. Because of syphilis the innocent are born into a harassed life of inferiority. Hale White, in his statistical table of the death rate in syphilitic subjects who had had two years of treatment, showed it to be nearly twice the normal in various periods after the first five years. The usual estimate of the incidence of syphilis in European cities is from 12 to 14 per cent of the adult population. These, however, are pre-Wassermann statistics. The sensitive modern tests record incidence in European cities as high as 20 per cent. In the cities of the United States Stokes estimates the general incidence as about 10 per cent.

The effect of sepsis on syphilis is most disastrous. Stokes confirms the observation of Duke as to the extraordinary improvement in cases of stubborn visceral and neurosyphilis, which may sometimes be secured by removal of all sources of focal infection. Stokes emphasizes the fact that the combined effect of inflammatory and degenerative changes may cause the diagnostician to overestimate the permanent damage, which can be seen only after the inflammatory complication subsides.

Recent knowledge of syphilis has unsettled, more or less, the opinions of the past generations which were based chiefly on clinical observation. It is probable that the present-day note of uncertainty is due in a great degree to the results of experimental research, largely on rabbits, and the occasional failure to arrest advanced syphilis, especially of the nervous system. Arrest of the disease in the nervous system may be hoped for, but the expectation of restoration of lost nerve tissue, merely because the defects are invisible, is no more reasonable than when there is visible loss of the integrity of external parts of the body. It is fairly certain that syphilis of the nervous system in a recognizable form is a late manifestation of an early nerve infection. Those patients who early show external manifestations of syphilis in the shape of well marked secondaries in the skin, mucous membrane, bones, and soft parts present a more curable form, or at least are less liable to syphilitic attack on the nervous system, even as a late manifestation; perhaps the disease in the visible parts of the body leads to earlier diagnosis and treatment. It is possible, or even probable, that there is a certain specificity in strains of spirochetes which causes attack in one case on the nervous system, and in another, results in effect on the external portions of the body. The work of Rosenow on specificity of bacteria leads us to believe that this is true. On the other hand, in the location and progress of syphilis the individual soil may be different and the spirochetes, the same. Negroes seldom develop syphilis of the nervous system, but suffer to a far greater extent from its vascular manifestaions, such as in the heart, aortic aneurism, and so forth, than the white race. In the Negro, when the nervous system is involved, the condition is usually due to the paralytic effects of cerebral thromboses, rupture of miliary aneurisms, and secondary embolisms, rather than to primary neurosyphilis.

Our sheet anchor of diagnosis has been the more or less fallible blood Wassermann reaction. The blood Wassermann reaction in the secondary stage of syphilis is manifest in nearly 100 per cent. of cases; in late syphilis of the viscera, bones, skin, and so forth, it is more than 80 per cent., and in syphilis of the nervous system it is about 50 per cent. Spinal puncture gives a higher average of successes than the blood Wassermann test. The nervous system has no lymphatics and the nerve cells are insulated by the neuroglia, so that the spirochete may remain latent here indefinitely, defying diagnosis, and protected against remedies.

It is probable that there are in the body certain other tissues in which the spirochetes may remain latent indefinitely without manifestations, such as the heart in congenital syphilis, and the testes, spleen, and lymph-nodes in acquired syphilis. The enlarged lymph-nodes may restrain the advance of the spirochetes, and so

encapsulate them as to prevent evidence of their presence indefinitely. Incidentally, the lymph-nodes may protect the spirochetes against medication, permitting reinfection of the patient from time to time, as would any other form of focal infection, quite parallel to the glandular manifestations of tuberculosis and cancer. In certain cases of intractable syphilis with splenomegalia, in which anemia is a prominent symptom, prolonged treatment sometimes fails to arrest the disease. Its progress is quickly arrested and the anemia promptly overcome by removal of the greatly enlarged spleen in which spirochetes will be found.

It may be possible that a similar condition exists in the deeper layers of the skin, where general medication for syphilis occasionally fails to arrest the disease. In such cases disappearance of the visible manifestations sometimes follows the inunction of mercury which possibly acts more directly on the disease than other forms of treatment.

The arsenic compounds are of great value, not only as curative agents, but also as public health agents, within six hours rendering carriers of the disease in a contagious form, such as chancres and mucous patches, temporarily incapable of infecting others. Occasionally, however, a serious reaction on the liver, with jaundice, results from the use of arsphenamin. Perhaps arsenic treatment is being overdone, especially in elderly patients who are less resistant to chemical poisons than younger patients. Admitting that the arsenic used in the chemical sense has been changed in arsphenamin, arsenic in various forms has been up and down in the treatment of syphilis a number of times in the history of the disease, but mercury has steadily maintained its place.

Stokes says,, "Early syphilis can be arrested in a high percentage of cases, and the majority of patients, if well treated, can be said to be cured. Late syphilis, outside the nervous system, can be arrested in the great majority of cases. Neurosyphilis can be arrested perhaps in from 50 to 60 per cent. of cases, and the condition of the patient greatly improved in from 80 to 85 per cent." While the percentage of syphilis is high, the number of patients who sustain irremediable damage is relatively small, which indicates either a high grade of natural resistance and hereditary or acquired immunity, or that treatment is more effective than is often believed. As I recall patients with undoubted syphilis whom I saw in my earlier practice and whom I have had opportunity to observe during life, it seems to me that there is a fair percentage of them alive and apparently well, and with healthy children. Mothers, who are possibly less seriously affected with the disease, may give birth to a syphilitic child; a mother may have stillbirths, abortions, and so forth, and yet develop an immunity and have healthy children who remain well, and she may also regain her health.

One rather discouraging feature of the present unsettled state of knowledge of the diagnosis of syphilis is the frequency with which cancer is still more or less justifiably subjected to diagnostic delay because of the failure rapidly to eliminate the question of syphilis, and it is certainly true that the bugbear of syphilis is responsible for the hopeless state in which some of these patients come to the surgeon. In urgent surgical conditions such as cancer, and in acute abdominal conditions, a necessary operation should not be unduly delayed for treatment of chronic syphilis. The syphilographer is sometimes too suspicious, and the practitioner generally too innocent. The surgeon can aid the syphilographer in the treatment of the disease by the removal of foci of latent spirochetal infection as it exists in the spleen, glands, and other tissues, and in the removal of septic foci which break down the general resistance of the patient.

TUBERCULOSIS

The septic factor is the most important in tuberculosis. Tuberculosis itself seldom kills unless the products of the tuberculous infection are confined in a bony box and produce injurious pressure, as in the brain. Other parts of the body, the thorax, peritoneal cavity, and the soft parts generally, yield to pressure, which gives time for the development of local resistance and generalized immunity. The greater number of patients with tuberculosis die from intercurrent disease in which sepsis plays the chief rôle. The Ancients recognized that opening a so-called "cold abscess" would be followed by hectic, picket-fence temperature, prolonged discharge, and eventually by the death of the patient. They recognized nature's ability to open such an abscess without the development of these symptoms, although they failed, as we fail now, to imitate the same safe drainage mechanism. Too often, physicians introduce probes into spontaneous

sinuses following cold abscess and cause deep infection and everlasting damage. So important is the septic factor in tuberculosis that the main consideration in any operation for the disease is to avoid mixed infection. In certain situations surgical tuberculosis may be a mixed infection from the start, as occurs in the intestine. The most common type is that due to swallowed sputum which causes multiple ulcerous lesions which, in time, often result in intercommunicating fistulas involving the small and large intestines, and run on to a fatal issue, but occasionally the ulcerous tuberculous process may be limited to a small intestinal area, and partial healing with obstruction takes place. Such patients are cured of the local lesion by resection, and the improvement in their general condition is very great. The septic factor in these cases is the deciding one in the eventual result.

In contradistinction to the ulcerating type of intestinal tuberculosis is the so-called hyperplastic tuberculosis, usually the result of bovine tuberculous bacilli, which usually involves the ileocecal coil, especially the cecum and ascending colon, although it is seen occasionally in other parts of the large intestine and even the small bowel. In this localized and most curable form, a tumor develops which so closely resembles malignant disease that the surgeon on resecting it cannot always rule out carcinoma until microscopic examination has been made. The severe anemia in these cases, as in malignant disease of the head of the colon, is out of proportion to the extent of disease and may lead the inexperienced to look on the case as incurable. Tuberculosis of the peritoneum is an interesting surgical condition.

The ascitic forms are most common in women and in them usually originate in tuberculosis of the mucous membrane of the fallopian tubes which are lined with ciliated epithelium, having on cross section, much the appearance of bronchi of the same size. The tuberculous peritonitis is the result of the escape of tuberculous material through the open fimbriated extremity of the tube into the peritoneal cavity, and the peritonitis is a conservative process of nature in an attempt to destroy the infecting material. The fallopian tube in tuberculosis is usually open, in contrast with the closed tube in gonorrhea. The reasons for failure to cure tuberculosis of the peritoneum in the majority of cases by merely emptying out the fluid can readily be seen. If the abdomen is opened the results are better, although still unsatisfactory, because the fluid is removed more thoroughly, not because sunlight and air are admitted into the peritoneal cavity. Complete removal of the fluid in many cases permits the fimbriated end of the fallopian tube to become adherent to the sigmoid or neighboring peritoneum so that the products are retained with the tube. The ascites disappears as the necessity for a peritoneal defense passes away, but the products accumulate in the tube and become manifest on pelvic examination. Removal of these tubes can be affected readily by enucleation, often without a ligature, with cure of the disease in a high percentage of cases. It is not necessary to remove the ovaries as they have only a surface infection similar to that of the intestine. The cause of tuberculous infection of the peritoneum, especially in children, is sometimes to be found in infected lymph-nodes. The so-called adhesive type of peritonitis, more common in the male, is a very favorable form. The abdomen becomes hard, fibrous exudate forms, and spontaneous recovery usually takes place. Operation should not be performed, since it merely opens up adherent spaces in the peritoneal cavity and sometimes leads to intestinal injury and fecal fistula. This type argues for a mixed infection from a septic source of origin, usually the intestine, and sepsis causes the plastic peritonitis. Because the complicating septic bacteria which produce the plastic exudate are short lived, the exudate will be found sterile. I have had a few cases in which early operation for the evacuation of localized pockets of septic material revealed short-lived types of pus-forming organisms which later would have disappeared through natural defense.

It is very important not to institute wound drainage following the removal of a tuberculous kidney. Unless there is distention of the ureter from stricture near the bladder, which would necessitate its removal with the kidney, the ureter should be handled very gently, catching it with a clamp at a point about 5 cm. below the kidney with its sheath, surrounding fat, and adherent tissues, cutting with the cautery, and dropping back into position without tying. A ligature placed in so vulnerable a situation is likely to be followed by a sinus which will be slow to heal. The tuberculous ureter should be

removed completely or its upper stump left sufficiently long so that if infection follows, drainage will be direct. Tuberculosis of the glands, joints, bones, and intestines, is much less common than formerly. The majority of such cases are bovine in origin and the incidence has been greatly reduced through the pasteurization of milk and the better care of dairy herds.

CANCER

Glandular involvement in cancer tells the story. While operative skill and technic are important, generally speaking our results show that without regard to the type of operation, five-year cures occur in 71 per cent. of cases in which operation has been performed for carcinoma when the glands are not involved, and in only 19 per cent. when they are involved. Local operations cure local disease; massive operations fail when the local stage has passed. Operative mortality in cancer is not as important as extension of operability, which gives a larger number of patients a chance for cure. For cancer of the gastro-intestinal tract, which means, practically, the stomach, large intestine, and rectum, a 10 per cent. mortality following operation is a fair risk and justifies the procedure. When I find my personal results as to mortality better than 10 per cent. I extend the operability, taking more advanced cases. Enlarged glands may be due to associated sepsis and not to cancer, and incorrect diagnosis may lead to failure to remove a curable growth. Methods of handling these cases, such as the two-stage operation of Mikulicz for carcinoma of the sigmoid, and preliminary colostomies, for cancer of the rectum, lessen the septic factor and are of the greatest value in extending operability and reducing mortality.

The associated sepsis in cancer is the cause of much of the distress and hurries the patient to a fatal end. In the Middlesex Cancer Hospital, by establishing strict asepsis and antisepsis, cachexia, which is a combination of anemia and sepsis, has been greatly lessened. The patients are made more comfortable and their lives prolonged. We all recognize the dangers of operating on the infected so-called inflammatory carcinomas such as are seen around the mouth, the cervix, and so forth. The use of the knife in these cases is often followed by quick recurrence and metastasis from infected venous thrombi. Cautery excision in these cases, followed later by plastic repair, is a step in the right direction. The cancer cell is five times as vulnerable as the normal cell and is especially susceptible to heat. The cautery procedure should not be abandoned, particularly in infected cancerous processes around the mouth and jaws. In many cases of infected cancer, radium and the roentgen ray are now used, and they have a similar effect without the risks of the tissue destruction and sloughing which accompanied the use of the cautery, to say nothing of the pain. Experience with irradiation has demonstrated a number of points. First, that if there is actual tissue loss by the involvement in carcinoma, while the disease may be eradicated by irradiation, the tissues are not restored. Radium is destructive and may be more so than operation. In the alimentary tract, huge fibrous strictures follow the use of radium, and secondary operation for the relief of these strictures is seldom as successful as if the patient had been operated on primarily. It should be remembered, too, that the handling of radium, especially in malignant disease, requires an expert. There are many men who, with a small amount of radium, do little good and an enormous amount of harm. With good faith, but poor judgment they apply radium in cases in which operation should have been performed early, causing delay and perhaps failure in a subsequent operation which, primarily, would have been successful. Patients who come to surgical operation, subsequent to the use of radium, have a greatly increased operative mortality and greatly reduced prospects of permanent cure. Generally speaking, the use of radium means the parting of the ways. If radium is elected, one can seldom turn back and take the operative route with a good prospect of success. In certain situations of the body where the tissues can be easily removed, this does not hold true, and in special cases the preliminary use of radium to be followed by operation, as quickly as the inflammatory condition from the radium subsides, may be advisable. However, the physician with little experience who, without surgical consultation, uses radium on the operable patient is not giving the patient a fair chance. The use of radium or the roentgen ray following operation has much to commend it in certain types of cases. The more cellular the growth the less the prospect of surgical operation, and the greater the prospect of benefit from radium and roentgen ray. In the

hands of the wise expert these agents have an enormous field of usefulness. In cases of inoperable cancer of the cervix uteri in which the vaginal wall is involved and the uterus fixed, radium often causes the disease to disappear painlessly; some of our patients have remained well for a term of years. Radium not only destroys the cancer cell and sterilizes cell nuclei at a greater distance, but it also reduces the sepsis. Because the ill-advised use of radium has done harm, let us not deny its extraordinary power for good when properly employed. Desjardins has demonstrated that irradiation by modern roentgen-ray methods in the hands of the expert is proving of great value and promises much in the immediate future.

SEPSIS

With the discovery of the causative bacterial agents in sepsis, there was an abandonment of all the knowledge which had come through clinical experience. I well remember as a student how the then new antiseptic school of surgery laughed at the "laudable pus" of the Ancients, and yet we now recognize that there is such a thing as laudable pus, and that the Ancients were right. We have failed utterly to destroy pathologic bacteria by agents which are not harmful to the human economy. We know that what happens in the favorable case of sepsis is the development of an immunity through natural processes, an increase of the bodily defenses and an attenuation of the bacteria until the resulting exudate may have the physical features of pus, but is no longer infective to the organism. This process was spoken of by the Ancients as the abscess getting "ripe", that is, ready for opening. Much harm has been done by knifing an abscess, prematurely breaking down Nature's carefully built defense, delaying the process of healing, and by the introduction of new and more virulent bacteria from the outside, reinforcing those that are undergoing deterioration from natural processes on the inside. The Ancients understood that the time to open an abscess was when it was "ripe and pointing," or when it was coming to the surface by way of a protected passage and development of a soft spot. Today it is often good practice in treating abscesses which are not under pressure to wait for them to become ripe and point. Many times it is wiser to let the abscess open spontaneously, certainly not to squeeze or force the pus out, thus breaking down the protection wall and opening up new avenues of infection. One can illustrate this best by our changing views of the handling of acute perforating appendicitis with spreading peritonitis.

Sistrunk has developed the fact that in the cases of acute appendicitis for which operations have been performed in the Clinic, there have been no deaths other than accidental if the appendix has been removed in the first twelve hours. In the second twelve hours the death rate from peritonitis following the rupture of an acutely infected appendix has been 3 per cent; in the third twelve hours 6 per cent, and between the end of the thirty-six hours and the sixth day, 16 per cent. In the ordinary types of acute and subacute appendicitis in which there is no escape of septic contents through a perforation into the peritoneal cavity, the appendix can be removed safely at any time. During the first few hours after such septic material escapes it remains in the vicinity of the appendix. After the first shock of the insult to the peritoneum the patient may be relieved of pain and appear much better, the period of the "fatal improvement" of Morison, since in spite of the fact that muscular rigidity continues, the unwary practitioner may thereby be led to postpone operation.

Removal of the perforated appendix after the process of spreading septic peritonitis has been established, more often does harm than good. It does not cure the peritonitis and it may break down nature's resistance in such a way that a patient dies who might otherwise have reached a stage of operative safety. It will be said that immediate appendectomy at any stage, regardless of peritonitis, would save many of these patients, who, without operation, would die. Perhaps in the exceptional case this may be true, but every cemetery has its gravestones which emphasize the rule. The surgeon of good judgment will recognize the exceptions to the rule of caution in the dangerous intermediary stage between the safe early and the safe late operation.

I have spoken of perforative appendicitis in terms of hours and days. It is a poor method of evaluating all the conditions which surround the perforated appendix, but perhaps it is as good as another, although the question really is one of the state of the septic process rather than of time. When this method of computing the pathologic condition is used, it is based definitely on

the time that the perforation occurs and not on when the patient is first seen by the surgeon.

Intestinal peristalsis is the agent which spreads the infection from the region of the appendix throughout the peritoneal cavity. Alonzo Clark improved results in his time by giving opium, which quieted peristalsis. Ochsner showed a better way to check peristalsis by stopping food. Since it is known that the fluids of the body and the necessary nutrition may be readily maintained by subcutaneous administration of 3 per cent glucose in sodium chlorid solution, in a serious case of progressive peritonitis it is best not to use even proctoclysis at first, because occasionally the solution will pass through a patent ileocecal orifice and start peristalsis in the small intestine.

Mann, in his classic experiments, removed the liver of a dog and found that in about eleven hours the animal passed suddenly into collapse and died within a few minutes. He discovered that if he injected glucose solution into the veins when this terminal stage had been reached, the dog would jump up, wag his tail, and appear quite happy, and could be carried on in this way for a considerable period. This brings up the point that after all surgical operations which involve the integrity of the gastro-intestinal tract, or in which there is danger of distributing sepsis by peristalsis, the early giving of fluids and especially food in the stomach is to be deprecated. The administration of normal salt solution or specially sterilized glucose in sodium chlorid solution subcutaneously affords a substitute which in the sensitive patient, by following Bartlett's method of adding a small amount of novocain, can be used painlessly. Hot fomentations applied to the entire abdomen and sufficient opium to relieve pain are of some value while the peritonitis is active.

After the peritonitis has subsided and the process has become localized, usually about the sixth or seventh day, the abscess may be opened, and if it is ripe, that is, if the infection has led to the development of general and localized immunity, the appendix can be removed with safety. If the patient is still very ill and the products more or less imperfectly encapsulated, under local anesthesia a small opening is made down into the accumulation through which a little piece of rubber tissue is introduced to evacuate slowly the septic products and relieve the tension.

Eight or ten days after the inception of an acute appendicitis, operations other than the evacuation of an abscess for the removal of a well encapsulated septic appendix which is progressing toward recovery, must be performed with caution. The plastic adhesions which develop as a result of the pathologic process have become vascularized and have developed lymphatics. Appendectomy at this time sometimes results in intestinal fistula or generalized sepsis.

Finally, I would call attention to the rectal opening of the pelvic appendiceal abscess. A patient is sometimes seen who is very ill with an indefinite tumefaction in the lower abdomen covered by intestines. Rectal examination shows a mass in the pelvis impinging on the rectal wall. If the abdominal tumefaction is watched it is seen to disappear, gradually sinking into the pelvis. The patient shows evidences of a localizing infection with a tumor pressing on the anterior rectal wall, which gradually increases in size, and rectal tenesmus becomes prominent. At the end of about two weeks the anus will be found dilated with considerable escape of clear odorless mucus, the tumefaction nearly filling the rectal space, pressing down against the peritoneum. On about the eighteenth day, the mass presenting in the rectum feels much like the stage of labor in which the child's head and the membranes are pressed against the cervix, represented by the anal muscles. The patient develops a peculiar nervous condition, shortly after which there is a sudden escape of an enormous amount of pus of foul character, with almost immediate relief to the patient.

I have watched many such cases, and in the earlier days I opened some of these abscesses through the anterior rectal wall. Most of the patients did well, but in some cases I failed to drain the abscess at the proper point. The drainage tube would become displaced, or fail to drain, requiring painful dressings. Sometimes I was able to delay the recovery of the patient for several weeks until the abscess finally opened itself at a place of its own choosing. I have seen cases of this kind in which the abscess was opened through the rectum, altogether too early, before the intestinal roof was firm, and evacuation of contents was followed by displacement of a loop of small intestine into the cavity from which the pus had been evacuated, resulting in death. I have never had a patient die if I allowed the abscess to go on to spontaneous opening.

A NEW OPERATION FOR FEMORAL HERNIA*

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With the present multiplicity of operative measures for the cure of femoral hernia, one hesitates to offer another. The reason for this vast array of operations (there are over 100 in the literature) is twofold.

The first reason is the extreme rarity of recurrences of femoral herniae after operation. In uncomplicated cases the mere excision of the sac and fatty tissue in the ring followed by closure of the skin usually produces a lasting cure. (Ochsner.[1]) The dead space is filled with a sterile clot of blood or serum which organizes and closes the canal. McBurney, at a much earlier date, recognized this and claimed good results by excising the sac and packing the wound open. When good results are attained by such simple procedures, it is evident that all methods which include this step will also be successful.

The second reason is that the femoral ring has rigid, inclastic walls which cannot be apposed, and various softer structures in the neighborhood have been utilized by different surgeons to close the defect. MacEwen, whose method was first applied to femoral hernia by Cushing,[2] Baldwin,[3] Nicoll,[4] Sprengel,[5] and many others have used the ligated sac as a pad to close the canal in various ways. Schwartz plugged the canal with a flap of the adductor medius muscle, Polya[6] with the sartorius, Kammerer[7] with a flap of the pectineus. Ferguson,[8] Goebel,[9] and VonMikulicz[9] have published methods of raising a flap of periosteum of the pubic bone and suturing it to Poupart's ligament to close the gap. Most of the other very numerous methods consist chiefly of raising the fascia covering the pectineus muscle and approximating it to Poupart's. Near the insertion of this fascia is a thickening in it, Cooper's ligament, which is used in the Lotheissen[10] operation in closing the canal at its inner or upper end. This principle has gained many adherents and Ruggi recently showed that fewer recurrences take place when the canal is closed from within. Several long series of cases done by the Lotheissen method have been published recently and the results were uniformly good.[11] [12]

The method which the author will describe is not recommended as a routine in simple cases. In his opinion, in the majority of small or moderate-sized femoral herniae, such a radical procedure is unnecessary and unwarranted, as recurrences after an Ochsner or a Lotheissen operation are uncommon. However, there is a small class of cases where the ring is very large and rigid or where it has to be enlarged at operation in order to reduce the hernia leaving a defect very difficult to close by the ordinary methods, and it is in these cases that most of our recurrences take place.

The technique is as follows: The skin incision begins over the external inguinal ring and extends about 6 cm. upwards and outwards, parallel to and about 2 cm. above Poupart's ligament. The external oblique aponeurosis is exposed and its fibres split upward from the ring for a distance of ¾ cm. This splitting should begin at the margin of the ring farthest from Poupart's, leaving a strip of the aponeurosis about 2 cm. wide attached to Poupart's. The internal oblique is now separated by blunt dissection and, together with the spermatic cord or round ligament, retracted upwards. The transversalis fascia, rather thin at this point, is torn through, and the neck of the sac exposed. The sac is pulled out of the canal, emptied and excised according to the method described by Moschowitz.[13] (In certain cases the sac will already have been removed from below.) A few sweeps of the sponge will now clear out the upper end of the femoral canal and a single deep abdominal retractor placed in the upper side maintains adequate exposure. A deep space is left. It is bounded above by the internal oblique muscle superficially and the peritoneum more deeply. Both are held by the retractor. Below is the pubic bone and more superficially, Poupart's ligament with Gimbernat's ligament joining the two in the mesial part. Laterally lies the external iliac vein, with the deep epigastric vessels just above it. Care must be taken in cleaning out this space not to injure an anomalous obturator artery, which sometimes arises from the deep epigastric, in which case it runs right across the field.

The lower fragment of the external oblique aponeurosis is now turned inward into this space

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and attached to the periosteum of the pubic bone just above the pectineal line. Two or three silk sutures are necessary, the innermost next to Gimbernat's and the outer, close to the external iliac vein. This produces a firm closure of the upper end of the femoral canal with a strong durable membrane. The floor of the inguinal canal is now closed. One kangaroo tendon stitch in the conjoined tendon, surrounding Poupart's and going under the cord or round ligament is usually enough. Next, the upper fragment of the external oblique is sewed to Poupart's with a running stitch, care being taken that each stitch includes not only the turned in lower fragment but a part of Poupart's as well. The skin is closed with clips.

The advantages of this method are as follows: 1, The closure of the canal is made at the upper end, leaving no pouch. 2, A stronger membrane is used than in any other operation. 3, The rigid and inelastic walls of the ring are not used, but instead structures that can be sewn together without the slightest tension. The latter is the most important factor and is a drawback to all operations which lift the pectineal fascia or Cooper's ligament and oppose it to Poupart's. I do not believe that this procedure causes any weakening of the inguinal canal. The upper fragment of the external oblique aponeurosis, as used in the Andrews[14] imbrocation operation for inguinal hernia, bears most of the strain and the very large number of these that have been done show that it is amply strong enough to prevent any stretching of the external inguinal ring.

This method as tried out by the author on dogs and cadavers takes slightly longer than the Lotheissen or Moschowitz operations, but is, however, much easier and quicker than any of the operations using flaps of periosteum of the pubic bone, or than any of the other operations that are comparable to it in the strength of the repair made. As stated before, it is not applicable or needed as a routine measure, but in difficult cases it makes a stronger repair than any of the methods in vogue.

The operation has been done three times by the author on a man and twice by Dr. E. Wyllys Andrews on cases of strangulated herniae in women, where the ring had to be enlarged to reduce the contents of the sac. Only one of these cases could be traced (the author's). He was seen 5 months afterwards and had no recurrence and no pain. The external inguinal ring would barely admit the tip of the little finger, showing that no weakening of the inguinal canal had taken place. The other four cases all showed firmly healed wounds with no bulging or impulse at the time they left the hospital.

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DISCUSSION

Dr. A. A. Strauss, Chicago: I am very much interested in Dr Andrews' operation. I have, for quite a number of years, performed the Moschcowitz type of operation for femoral hernia. There is no question when the femoral ring is very large, it is rather difficult to bring the pectineal ligament toward the ramus of the pubis and close it. I can very readily see, when the ring is large, that such a plastic operation, as Dr. Andrews has devised, of bringing down the external oblique is a much more simple procedure than to close it up by the Moschcowitz method. I want to congratulate Dr. Andrews on devising this ingenious operation.

Dr. C. B. Ripley, Galesburg, Ill.: I would like to second what Dr. Strauss has just said. I think Dr. Andrews has shown a surprising amount of ingenuity and it appeals to me greatly I would be glad if he would, in the near future, say in a year after he has followed up those cases and succeeding cases, he would take the trouble to send me the end results as to weakening or non-weakening of the inguinal canal.

Dr. Edmund Andrews, Chicago (closing the discussion): I do not suppose it will be possible to tell about weakening of the inguinal canal except by experiment. I will be very glad to do what Dr. Ripley wants.

There is just one little point, the aponeurosis of the external oblique is quite thin and the fibers are spread apart to quite an extent in the region just above Poupart's ligament even in the normal man. These fibers are sacrificed, and the loss is made up by membrane that is taken from farther up. In the Andrews' operation as done now, it proves that it is possible to bring those upper fragments down to Poupart's ligament without any undue tension.

THE LIPOIDS

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The word "lipoid" has a physiological meaning and, like the word "ferment," does not confine any well determined chemical group. The lipoids are really functional entities which have forced themselves upon us. Our actual definitions and classifications of those organic substances having the appearance of fats are as important as were those of the albuminoids. In the same way as we never talk of albuminoids, but of proteins, in which are included the albumins, the globulins, the protamines, etc., it would be better to designate as adipoids a group of substances which includes the true fat, the acid fats, the waxes, the lipoids, the cholesterids, the protagons and the cerebrosides.

It has become customary to designate under the name of lipoids everything that is extracted from the tissues and humours of the organism by means of solvents such as ether, chloroform, benzol, etc. But the first extractions remove, in addition to the adipoids, many impurities such as proteins, colouring matter and even some salts. It is only after several precipitations and further treatment with appropriate reagents that a pure lipoid is obtained, or at least a group of lipoids in which one of them is so largely in excess that one may ignore the rest. The final product is a substance which has more or less the appearance of a fat, but it differs completely from a fat in its biological properties and also in the chemical constitution of its molecule. In fact, a lipoid is more a fat than is vaseline, in spite of its physical appearance.

At the present time the following points may be considered as settled:

1. The lipoids are adipoids. Their molecule, which is much larger than that of the true fats, contains one or several radicals of the higher acid fats, often glycerophosphoric acid, a nitrogenous base which is variable and characteristic of the lipoid in which it occurs, sometimes sulphur in place of the phosphorus or even sulphur and phosphorus together. It is for this reason that they have been classified as phosphatics, sulphatids and cerebrosides, which latter contain neither sulphur nor phosphorus.

In short, whilst the true fats are always ternary substances (C. H. O.) the lipoids are always at least quaternary (C. H. N. D.) and more often than not quinternary (C. H. O. N. P.).

2. Cholesterin is not a lipoid any more than is alcohol or phenol or certain bases of organic origin which are soluble in alcohol or other. Cholesterin is an adipoid. It is a ternary substance and has an alcohol function. It always accompanies the lipoids and seems to have a balancing function or a neutralizing action with regard to these substances, attenuating or compensating some of their effects.

3. Pure lipoids may be prepared which are absolutely free from all trace of proteins. It is with such pure lipoids that I have carried out my researches.

4. The lipoids are not colloids, although they may give fine emulsions with water. They are no more colloids than are sulphides of arsenic or iron hydroxide, in spite of the fact that in certain conditions during their preparation they may be found in the form of colloidal suspension.

5. Overton thought that all cellular changes were conditioned by the lipoids. It is now known that this opinion went too far and that liposolubility intervenes as a factor only in certain conditions, which may be considered as exceptional, as in narcosis for example.

Nothing definite is known regarding the function and the importance of the lipoids in immunity. There are facts in great number, a cloud nucleus of science. It is probable that there is no general law governing this condition. It is impossible to synthetise.

Certain lipoids are hemolytic, others on the contrary are anti-hemolytic. I have myself showed, with Foucaud, that the red corpuscles contained lipoids which protected them against the soaps and saponin. Certain microbes contain hemolytic lipoids. Kyes' cobralecithid was the subject of some very beautiful research work on the part of Fourneau and Delezenne who characterized it as an anhydride of the mono-palmito-phospoglyceric ether of chlorine. It is then a type lipoid.

The lipoids have no constant function in hemollysis: it is all a question of kind. All depends in fact on the conditions and on the different substances with which the lipoids can enter into combination. The case of cobralecithid is perhaps not unique.

The lipoids of certain microbes are toxic. Some of them, injected under the skin, provoke

intense inflammatory reactions. This is the case with certain lipoids extracted from the tuberculosis bacilli.

It is not certain that the lipoids are antigens.

It appears that they play an important part in the Wassermann reaction.

Calmette, Massol and Guerin have pointed out that animals whose serum is rich in lecithin are less liable to tuberculosis than those whose serum is poor. Regarding the fixation of toxins, generally speaking, there is no law: it is again a question of kind. There are lipotropic toxins just as there are alkaloids which are lipsoluble, or otherwise. All depends then on the physicochemical properties of the toxin under consideration.

It seems to be almost certain that, in certain cases, lipoids, either pure or combined with certain ether substances, may play an important part in some of the mechanisms of immunity. All depends on the case. This is all that can be positively affirmed and it is extremely gratifying. It is possible to formulate a general law on the part played by the inorganic salts in the organism? Certainly not, for all depends upon the salt and the case under consideration. It is sufficient to know that the salts play a capital role in the phenomena of life, leaving us to study each particular case thereafter. It is exactly the same thing with lipoids.

The experiments of Hopkins are very often cited as the first which demonstrated the absolute necessity of the presence of lipoids in food. It was really Wilhelm Stepp, whose first researches date from 1909 and were finished in 1911, who raised the question and showed the way, even to the American authors who only brought to the doctrine of Stepp some complementary details, but they created a new word: Vitamine A or Vitamine lipsoluble. First Stepp and Hopkins a year later proved that it was impossible to maintain an animal alive or to permit of the growth of a young one, with a regimen which was rigorously deprived of all its lipoids. The researches of Neville, MacArthur & Luckett, McCollum & Davis, Lafayette B. Mendel, Osborne and Mendel, Hans Aron, Durlach, Heubner, Roehl, et al., confirm the experiments of Stepp: any regime without lipoids is deficient. It must, however, be taken into account that, in order to deprive a tissue entirely of its lipoids, very prolonged extractions are required, and very often a series of solvents. It is to technical faults in making the extraction that certain contradictory results published by some American authors must be attributed. The only argument which can be brought forward for the existence of Vitamine A fat-soluble, which it may be stated would be removed by the extracting solvents at the same time as the lipoids, is the very small quantity of lipoids which it is necessary to furnish, in order to complete the regimen. But this argument has no value whatever. It is only necessary to consider that, the organs of a rat containing altogether a few centigrams of lipoids, a very small quantity of butter or hepatic lipoid would suffice to be greatly in excess of the quantity of lipoids contained in all its organs. Nearly all the experiments of this kind were carried out on rats. We also know from Roehl's experiments that the organism is incapable of synthetizing the characteristic lipoids of its organs from inorganic phosphorus, however much of the latter be supplied to it, and from another source (Heubner) that growth is best promoted by organic phosphorus.

Animals submitted to a regimen deprived of lipoids can be preserved by the addition to their food of butter, cream, a little cod liver oil or lipoids from the kidney, pancreas, liver, muscles or other organs. But on the other hand, neither lecithin, nor cerebron, nor cephalin, possesses this offsetting property.

Lipoids play a leading part in the nutrition of the cornea and in the development of the skeleton. Some time ago, the Japanese Doctor Mori had noted the frequence of xerose of the cornea and of keratomalacy in children fed exclusively on vegetables. These children recovered perfectly when given cod liver oil. Goldschmidt and A. Franck were able to reproduce in rats these serious troubles of the cornea and conjunctive with a regimen deprived of lipoids.

Regarding skeleton troubles, the researches made by Mallanby are not conclusive, since the rechitism in his young dogs was provoked by the simultaneous absence of lipoids and lime. It is true that the subjects recovered on receiving cod liver oil. But on the other hand, many cases have been observed since the war of osteomalacy in young children who received, as fat food, only a kind of vegetable margarins. These facts have been observed by Bloch at Copenhagen, Harriette Chick and Elsie J. Dalyell at Vienna. In all

these cases a small quantity of cod liver oil was sufficient to obtain a cure. Now, I showed since 1914, that the activity of cod liver oil was solely due to the lipoids contained in it and that it is only necessary to remove from it, by precipitation with acetone (at low temperatures) the contained lipoids, for it to lose its specific properties.

For a great number of English authors and for the Commission delegated by the Lister Institute and the Medical Research Committee, the lipoidic substances and the fat-solubles play a capital role in the development of the skeleton and are given the name of antirachitic substances. But these conclusions are based on the researches of Mellanby which do not carry absolute conviction.

In any case the lipoids are indispensable for life and for growth that is certain and it was first demonstrated by Stepp. It appears that, for the adipoids as for the proteids, the organism has not only quantitative needs but also qualitative, and that, just as it is incapable of synthetizing certain amino acids, it is incapable of synthetizing the stearines and certain of the highly differentiated lipoids.

But there is more to be said. My researches have proved that the lipoids play not only a capital role in the general development of the organism, but further, that certain lipoids exercise a local influence on certain organs. It is these facts—the influence of certain lipoids on the nutrition and growth of certain organs, to which I first called attention,—that I shall now set forth.

Here arises an important question. Do certain organs contain lipoids which are specific and characteristic for the organ under consideration? We can at once reply in the affirmative for the heart, the liver, the placenta, the corpus luteum, the brain and the thyroid. Elandsen has extracted from the heart a mono-aminomono phosphatid containing an animal base (amino biogone) which is found nowhere else and which is characteristic for that organ. I have isolated this same lipoid and have found that it has marked exciting and cardiotonic properties. The corpus luteum contains a lipoid which is a pentaminodiphosphatid (Herman) which is found nowhere else in the organism and is characteristic. The placenta contains a lipoid which is very rich in nitrogen and which is characteristic. The kidney contains carnaubon, isolated by Dunham; the pancreas, vesalthine, isolated by Frankel. The nervous system contains sahidine (Frankel), sphyngomyeline, which Rosenheim and Tebb were able to isolate by means of hot pyridine, cephaline, etc. The lipoids extracted from the different organs differ one from the other completely in their physical aspects. Nothing is more unlike the ovarian lipoid than that of the testicle or the thyroid.

Another and surest method of differentiating one lipoid from another is the physiological method. It is the method I adopted. Just as the physiological method is the only one which enables one to know definitely whether a ferment is glycolytic or amylolytic, so the experimental method which I followed is the only one, until the chemists have finished their study of the lipoids, which allows one to study their physiological role.

My first experiments date from 1908. I used principally rabbits, sometimes also dogs. I always kept controls of the same age and weight and sometimes even from the same litters.

I was able thus to demonstrate that the administration of an ovarian or testicular lipoid to a young rabbit, provoked, after a certain time, hypertrophy of the ovaries and uterus or, respectively, of the testicles. While the uterus of the rabbit controls weighed on the average 3.5 to 5 grams, those of the treated subjects weighed from 8 to 10 grams and even more. In the same way, while the ovaries of the treated subjects weighed (the two together) .75 to 1.3 grams, those of the controls weighed .4 to .5 gram. Similar results were observed in the case of young males treated with the testicular lipoid.

With the thyroid lipoids (the portion which is insoluble in acetone), I have found after a few weeks (generally 12 to 14) not only an increase in the thyroid, but also a slight hypertrophy of the heart and of the genital organs, this last however much less accentuated than with the ovarian lipoid.

I have shown, after Kepinow, that the administration of the lipoid of the red corpuscle to rabbits which had been abundantly bled, provoked a very rapid regeneration of the red corpuscles.

The lipoids of the heart, kidneys, adrenal bodies, give results which are absolutely comparable with those obtained with the ovarian and testicular lipoids, in the case of the adrenal bodies, the results are different according as one

administers the lipoids of the cortex or the medullar: increase in the heart and the adrenal bodies, slight increase in the size of the kidneys in subjects treated with the lipoids of the medullar no increase in the heart nor in the kidneys, slight increase in the adrenal bodies in those treated with the lipoids of the cortex, and at the same time disturbances in the hair system and in skin pigmentation.

Regarding the liver, I have extracted a lipoid which is not only an excitant to the liver but which exercises a remarkable influence on the growth and weight of the animals treated. If Vitamine A exists, which is very doubtful, it is in the liver lipoids that it is found in greatest abundance. It was these first experiences which led me to inquire whether the action of cod liver oil, not only as a promoter of growth but also as a completer of the diet, was not due to its lipoids. My researches on this subject as I have stated above, have fully demonstrated that the characteristic properties of this oil are due to the hepatic lipoids contained in it.

Animals suffering from under nourishment due to a regime deprived of lipoids recover very rapidly when given hepatic lipoids. Moreover, young rabits treated with injections of 2 centigrams of these lipoids daily for 130 days, increased in weight 59 per cent, while the controls only increased 29 per cent.

Some of the facts which I have observed have been noted by Fellner who, after injecting into young rabbits treated with injections of 2 centiweeks, found marked hypertrophy of the uterus with hypertrophied mucous, presenting lengthened cylindrical epithelial cells. Tests made by this same author, on women with the ovarian lipoids and on men with the lipoid of the testes, gave him results of the same order as those observed in the experiments on animals.

Hermann injected the lipoid of the corpus luteum into three young rabbits and obtained congestion and hypertrophy of the uterus and, at the same time, an abundant serous secretion of the mammary glands. He noted also that this lipoid reduced the rut cycle to two weeks whereas it is normally a month. He obtained results of the same order on castrated animals. These presented considerable hypertrophy of the uterus and the mammellae together with a serous secretion.

All my experiments with the ovarian lipoids have been repeated by Nafilian who confirms them in every particular; moreover, he experimented with the ovarian lipoid on pregnant females and observed that not only did the ovarian lipoid cause no trouble in the normal cause of gestation, but that the young weighed at birth more than those of animals which were not treated. He noted that the mammellae of the mother who had been treated were gorged with milk.

What is the mechanism of the action of the lipoids?

Before trying to answer this question, we should give prominence to two important facts:

The first fact is that the quantity of lipoids contained in an organ diminishes in the majority of cases when the organ is diseased. Whereas one finds in the normal fresh liver of an adult about 60 per cent of lipoids (the part which is insoluble in acetone), scarcely 20 to 45 per cent is found in the case of Laennec's cirrhosis. The quantity of lipoids is diminished even when the organs are attacked by fatty degeneration. Koch and Mann, Carbone and Pighini found an impoverishment in lipoids of the brains of numerous subjects who had succumbed to chronic affections of the nervous centres. The same poverty in lipoids was found by Mott and Barratt, Haliburton, in the marrow of tabetics, by Ambard, Rathery and Schaeffer, in renal sclerosis, by myself in the liver in cases of phosphoric poisoning.

A second very important fact which must be recognized, is that when a lipoid is administered to an animal, the lipoid goes to and fixes on a determined organ, electively. As far back as 1907, Franchini had shown that lecithin, administered orally to rabbits, was fixed exclusively by the liver and the muscles and not at all by the brain, although this organ is the most lipotropic of the organism.

These experiments also proved that lecithin traversed the digestive tube without being altered by the lipolytic ferments, a fact which has been confirmed by Stassano and Billon as well as by Terroine. Salkowski wanted to know whether the brain, which is unable to fix lecithin, which does not enter into its constitution, was able to fix one of the lipoids of which it is constituted. He tried the sahidine of Frankel, one of the most important constituents of cephaline. He was able to determine that after four days of administering this lipoid orally, the quantity of lipoidic

phosphorus in the brain was augmented, that the liver did not fix any sahadine and that this appeared to be fixed for the most part in the brain. In the same way, the ovaries of animals treated with the ovarian lipoid are enriched in phosphorus.

The lipoids act then by fixing themselves electively on the organ from which they are derived and in the case of some of them, also in part on other organs (thyroid, liver).

The experiments on animals and chemical analysis prove that in certain cases our organs are unable to synthetize their constituent lipoids and that it is necessary to furnish them with them already prepared. It is for this reason that I have named these lipoids "Homo-Integrants." In truth they are Homo-Aliments.

It was quite natural to try the lipoids in human therapeutics.

Since 1910 I have tried the ovarian lipoid on women suffering from different ovarian troubles and have had the most satisfactory results.

Nafilian has treated 14 cases with the ovarian lipoid. He cites in his work 12 cases of ovariotomy, 15 monopause troubles, 7 cases of chronic ovaritis, 3 amenorrhea, 17 dysmenorrhea, 4 of senility, 4 chlorosis, 3 of divers troubles attributed to hyo-ovary, all cured by the ovarian lipoid treatment.

Seitz, Wintz and Fingerhut made tests with the lipoid of the corpus luteum and arrived at the same conclusions as myself. The late Jaquet, Doctor of Saint Antoine, and his assistant Debat, for a long time had a patient suffering from rebellious acne due to hypo-ovarian trouble and who was cured by the ovarian lipoid. I will not cite again the facts of the same kind noted by Fellner, Herman, of which I have written above.

It would be tiresome to cite here all the authors who have employed lipoids with the most satisfactory results. The hepatic lipoid is employed by many physicians at present in the place of cod liver oil. Results are more constant and more regular than with the oil. They are moreover much more rapid, and one notes important increases in weight after the first month in children or in adults who are of tuberculous tendency. The heart lipoid is perhaps the most powerful and the most inoffensive of the cardiac tonics. The lipoid of the red corpuscles, that of the brain, of the kidney, and pancreas have their precise indications, easy to deduce from experimental facts. It is not necessary to enlarge further this point.

In conclusion I believe that it is difficult not to admit, at the present time, that in many cases of deficiency of the internal secretions, it is simply a question of the lack of lipoids. Our organs, in certain conditions, being unable to synthetize their own lipoids, it is necessary to furnish them already made.

It is known that in the case of the albuminoids, these are the better assimilated for being taken from a species nearer akin to the animal receiving them; that animal albumins are better utilized than those of vegetable origin.

At the present day there exist wide divergencies of opinion among physiologists and doctors on the subject of the internal secretion organs.

Whilst the majority of physiologists consider that we have the right to admit as internal secretion glands, only a limited number of formations—the interstitial gland, thyroid, parathyroid, the Langerhans bodies and, perhaps, the adrenal bodies—the doctors, on the other hand, in view of the results obtained by opotherapy with powders of organs and tissues of great variety appear to suppose, and even find that there are internal secretions in every portion of the organism. I believe that these divergencies of opinion between physiologists and doctors are entirely conciliated by admitting that for the most part, when we practice opotherapy, we practice homo-alimentation.

The homo-alimentary theory is practically proved at the present time in the case of the lipoids which fix themselves electively in the organism.

I may add, in conclusion, that if the vitamines A exist, which is very doubtful, these vitamines are to be found in greatest abundance in the lipoids of the liver and the pancreas.

There are vitamines A which favor the growth of the whole organism, there exist local vitamines for each organ, and they are its lipoids. It is further possible that the specific nature of the lipoids of each organ is due to the nitrogenuous base—amino biogene, which enters into the constitution of their molecule.

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EARLY DIAGNOSIS OF CHRONIC CARDIAC CONDITIONS

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One of the most important advances that modern medicine has made is the demonstration that many chronic diseases with an underlying incurable pathology, can be, in large part, controlled and their progress arrested. Diseases hitherto regarded as hopeless in their outlook are now recognized as not incompatible with many years of normal useful life. The one striking fact that has come with this recognition is that the factor above all others determining prognosis is the stage at which the chronic process is recognized and control measures instituted. Efforts to extend our ability to recognize these pathological processes at the earliest possible moment represent, therefore, at least one of the most important lines of endeavor in the study of chronic disease.

The heart is an organ peculiarly prone to chronic disease. Its position in the main blood vascular stream exposes it to bacteremias and toxemias of whatever origin and its function as a mechanical pump to maintain an efficient circulation through all organs of the body subjects it normally to great variations in its physiological load and even greater demands when pathology in other organs develop. It is an organ which stands at least in large part alone in its peculiar function. The glands of the skin and the intestinal tract may function in large part for the kidneys, every endocrine organ is in its function only an interrelated part of an extensive system, a large portion of the lungs may be set at complete rest to facilitate defensive reactions. The heart has no co-worker to assume vicariously even a part of its function in time of trouble and stress. It is an organ which not only must always function, but which must show a function capable of greater variations probably than any other continuously active organ in the body. Direct determinations have shown variations within the normal of at least seven times unity, a demand known to be exceeded when abnormal conditions develop.

Chronic cardiac conditions fall clinically into two great groups, first the group consequent upon invasion of the body by pathogenic organisms and by toxemias developing from various causes, and second the group associated with disturbances in nutrition either directly in the heart itself or in other organs and thus indirectly affecting the heart, and due in the great majority of cases to local or general arterial disease. As a rule we are concerned with the first group before, the last group after, the mid period of life. This differentiation has long been recognized and many associated facts have accumulated from years of experience. We know, for example, that in the former group the underlying pathology is usually an endocardial involvement which is particularly prone to affect the mitral and less frequently the aortic valves directly in the process, while in the latter group one finds more frequently an initial myocardial or aortic change with secondary valvular involvement. Numerous exceptions occur, but as a working basis this differentiation has great advantages. In the latter our attention is focused on the myocardium and etiology is sought in the vascular system and other organs are studied for concomitant evidence of vascular insufficiency. Recognizing the limitations of this broad differentiation, it is nevertheless convenient and fairly accurate for the great mass of cases met with in clinical practice.

The three main fields of inquiry to which we direct our attention in any particular case and upon which we base our diagnosis are: 1. Etiology; 2. Symptomatology; 3. Physical Examination. I should like to include under the latter any or all of the objective methods applied to a study of the body which may help us to detect underlying pathology, either directly by the usual senses, or through the assistance of special instruments. It will be impossible for me to cover systematically each of these divisions; but what I shall try to do is to point out certain things under each which I regard as of especial importance.

Etiology. The one outstanding etiological factor in the causation of chronic cardiac disease in individuals below the age of fifty is acute rheumatic fever. A careful cardio vascular study of a series of thirteen of these cases during

initial attacks in the University Hospital at Madison last year showed in twelve definite evidence of cardiac involvement during the course of the infection. It is possible that the heart is affected in every case of acute rheumatic fever; in only approximately half, however, to the extent that a sufficient functional handicap develops to constitute clinical heart disease. It is safe, however, to regard every case who gives a definite history of rheumatic fever as a potential case of heart disease and in the presence of physical findings of doubtful significance to take this into account. In this connection it is important to remember that "rheumatism" from the medical standpoint means nothing. It has a similar significance in a history as "shortness of breath" or "spitting blood." It is necessary to inquire in detail into the nature of the illness to differentiate it as one of acute rheumatic fever. Next to acute rheumatic fever the most important diseases in the preceding history as a possible etiological basis are chorea, recurrent attacks of tonsilitis and syphilis. In an individual below fifty, it is important to remember that an aortic lesion alone, aortitis, or myocarditis without a precedent endocarditis is in the great majority of cases of leutic origin and justifies anti-leutic treatment even in the absence of a positive history and a positive Wassermann. Less important from the etiological standpoint are influenza, scarlet fever, diphtheria, measles and typhoid fever. The last named disease is important in that it may simulate subacute endocarditis. In the second broad group of cases that we have recognized, habits of living are of more significance from the standpoint of etiology than preceding disease, and these in general are those prone to produce early arterial degeneration.

Symptomatology. The main effort in the diagnosis of early chronic disease of the heart should be before definite symptomatology develops. Accurate observation teaches that in both of these groups of cases the initial pathological change may and usually does develop for long periods of time before evident symptoms occur and the fact of "heart disease" is impressed on the patient's mind. There are certain points, however, in regard to the significance of certain complaints which are worthy of consideration. The general queries in regard to palpitation, heart irregularities, shortness of breath, weakness, dizziness, faintness, and pain, if answered positively, requires detailed elaboration to be of any significance. Palpitation may mean anything from a recognition at times on the part of an individual that he has a heart beating within him to paroxysmal tachycardia or auricular fibrillation. Everyone is "short of breath" after sufficiently violent exertion, and it is of essential importance to determine whether it is of normal or abnormal extent. "Smothering attacks" of the neurotic type should be differentiated from paroxysmal dysnea and orthopnea. Weakness is a matter of individual expression and can be evaluated only by careful inquiry. Dizziness, faintness or actual fainting may vary from the slight disturbance of the neurotic and dyspeptic to attacks of grand mal or Stokes Adams Syndrome. Pain is perhaps the most difficult symptom to properly evaluate. Its position, character, intensity and radiation, its association with other symptoms and its dependance upon certain possible exciting causes, such as exercise, position of body, meals and mental excitement should form the subject of careful inquiry. Other examples could be given, but these are sufficient to emphasize that in the attempted early diagnosis of cardiac conditions an elaborate and detailed inquiry into certain points, those particularly relevant to the matter in hand, is more important than a superficial catalogue of general symptomatology.

Physical Diagnosis. The general physical examination in suspected heart disease should be of the rigid systematic type, with special emphasis on certain features. Eye reflexes and extraocular movements are of especial importance in reference to the presence or absence of thyroid disease and these are to be followed by examination of the thyroid gland itself and tests for tremors and quadriceps weakness. The number of early hyperthyroid cases, both of the exophthalmic and toxic adenoma types who first seek medical advice because of suspected heart disease is very large, and the neglect of a certain unrecognized percentage of these cases who are diagnosed and treated incorrectly as cardiac cases is an unfortunate incident. It will be well to state briefly here the common cardiac-vascular symptoms and signs of early hyperthyroidism. Rapid, unstable heart action, associated with one or more of the following; excessive sinus arrhythmia, extrasystolic arrhythmia, paroxysmal

tachycardia, paroxysmal auricular flutter and auricular fibrillation. Reduced peripheral resistance in the circulation associated with low diastolic pressure, high pulse pressure, capillary pulse, collapsing radial pulse and frequently the pistol shot sign. These two sets of factors together are largely responsible for the palpitation, cardiac distress, peripheral throbbing and probably also the vasomotor instability and physical weakness; symptoms so frequently leading to the first medical consultation in hyperthyroidism. Systolic murmurs, usually basal, maximum in the second left interspace and with little transmission, but occasional apical and simulating the mitral systolic murmur, are very frequent. Evidence of slight cardiac enlargement, particularly of the left ventricles, may be evident to percussion or to X-ray examination. The type of cardiac condition which the early thyroid heart most simulates is the so-called neurocirculatory asthenia, effort syndrome or disordered action of the heart (D. A. H.). Points of differentiation are the usual absence of arrhythmias other than sinus arrhythmia in D. A. H. and the tremendous variation in this condition in the pulse rate, depending on posture and muscular exercise. The heart rate in D. A. H. may be normal or even sub-normal in the prone position, reaching excessive rates on standing or after slight exercise. Evidence of peripheral vasodilation are often encountered in D. A. H. as well as in hyperthyroidism. Determination of the basal metabolic rate may be necessary in doubtful cases.

The usual routine physical examination should be concluded in order to detect, 1. possible indirect evidence of cardiovascular disease; 2. the exclusion or inclusion of associated disease other than cardiovascular. Special cardiovascular physical examination may be considered according to the following scheme:

1. Determination of the size and contour of the organ:
   - Inspection.
   - Percussion of deep cardiac dullness.
   - X-ray methods.
2. Modifications in cardiacvascular dynamics:
   - Murmurs.
   - Aortic and pulmonic second sounds.
   - Peripheral vascular signs.
3. Relation in physiological muscular balance and the integrity of the automatic and conduction systems.

Determination of the size and contour of the organ represents the most important single procedure in cardiac diagnosis. If we were in position to detect with perfect accuracy the departure from the normal in this respect, we could, with our present knowledge of cardiodynamics, determine the presence and estimate the extent of every cardiac abnormality except those specifically affecting the automatic and conductive system. The heart is composed almost exclusively of actively functioning tissue. Its function is purely mechanical. Any change in its load results in change in the mechanical demands made upon it. The active tissue, as other muscle, increases in mass with increasing mechanical demands. If we can know the departure from the normal or physical average of each cardiac chamber, we can infer the underlying mechanical disturbance responsible for the change. If the mechanical disturbance has not been sufficient to produce this change, provided that compensation is maintained, it can be ignored from the clinical standpoint. A heart which has suffered no additional mechanical load than that encountered in the average normal life, has undergone only these changes in size and shape which are to be regarded within normal limits. A heart which has suffered greater demands due to disease meets these demands by increase of functional mass, and the event is marked indelibly upon it by departure from the normal or average in size and contour.

Extensive studies made by a number of anatomists and clinicians have shown that it is possible to constitute within certain limits a physiological normal for the heart size and shape, and this gives a basis for determination of departure from this in disease. The most extensive data that we have in this connection is available from the studies of Bardeen[1], who has shown the relationship between the projection of the frontal plane of the heart and the body weight, height, age and sex of the normal individual. This projection can be obtained approximately by percussion, but more accurately by special X-ray methods. Further elaboration leads, as we shall see, to a study of contour and development in planes other than the frontal, only possible by X-ray methods and unfortunately impossible by percussion.

1. Bardeen, C. R.: The Amer. Jour. of Roentgenology, Dec., 1917.

Location of the apex beat by inspection or palpation is of value. Taking as the apex beat the furthermost out and down region of pulsation, it should normally lie, in the adult, in the fifth interspace slightly within the midclavicular line. It is usually higher in children. It may occasionally be in the sixth interspace and still within normal limits in long narrow-chested individuals. In individuals with thin chest walls, with a small amount of overlying lung and especially with a small antero-posterior chest diameter, the heart may be close to the anterior chest wall and the pulsation may extend several centimeters outside of the midclavicular line. Finally, in a few cases the normal heart may be unusually placed to the right or left, leading to unusual position of the apex beat. The apex beat, while frequently giving a clue to cardiac enlargement, should be properly evaluated as it may lead to erroneous conclusions.

Accurate percussion of the frontal projection of the cardiac contour is the most important of the ordinary methods of physical diagnosis as applied to the determination of early cardiac lesions, and should be assidiously cultivated by one desiring proficiency in this field of diagnosis. Constant efforts, preferably controlled and corrected by comparison with similar determinations made by the more accurate X-ray methods is the price of proficiency. The left cardiac border is difficult to define because we are attempting to outline a solid body lying beneath a variable thickness of air bearing tissue. The right border presents the same difficulty with the additional complexity introduced by the nearness of the sternum. The upper and lower borders, necessary to complete the area of projection in the frontal plane, can be completed only by inference from the position and contour of the right and left borders. The results of percussion can be recorded in a number of ways. The two most useful methods are measurements in each interspace from the second to the fifth or sixth to the right and left of the mid sternal line, or the transference of the outline of percussion area to a diagram.

Practical X-ray methods to determine the area, shape and dimensions of the projection of the frontal plane of the heart are the distant X-ray plate or teleroentgenogram and the method of orthodiascopy. Both of these methods are designed to reduce or prevent the distortion that occurs in the ordinary X-ray method due to the spreading of the rays from the target. The distortion in an ordinary X-ray plate or fluoroscopic examination is increased by increase in distance between the object examined and the plate or fluoroscopic screen and by decrease in distance between the tube and the object. In the teleroentgenogram the object or heart is brought as close as possible to the plate and the tube placed at a distance. The working distance is usually two meters between target and plate. A simple mathematical relation shows that the distortion in area of the object under these conditions is approximately six per cent. In orthodiagraphy, means are adopted to use only the central or incident ray proceeding from the target of the tube and to shift the tube so as to bring this ray successively along points at the border of the organ. By marking its projection on the fluoroscopic screen there is obtained an undistorted and true projection of the organ outline. This may be done by arranging the tube and screen to shift together, and by having a mark on the screen in the path of the incident ray, or by placing cross wire in front of and attached to the tube box in the position of the incident ray; the position of this ray thus being made evident on the stationary screen.

Most of the data in regard to cardiac size and contour that we have is in reference to the frontal plane projection. Bardeen has obtained extensive data on normal hearts at different ages and body size which gives the average normal area of the cardiac contour and the greatest transverse diameter for given ages, height and weight. The area of the frontal projection is readily and quickly determined by the use of a planimeter and by reference to the table compared with the average normal.

Determination of the contour and area of the frontal plane projection is most valuable in relation to certain cardiac conditions. Perhaps the greatest importance attaches to the question of the signficance of systolic murmurs. A systolic murmur may be, *1* extracardiac, *2* accidental, and of unknown significance, *3* due to relative mitral regurgitation as a result of dilation of the mitral ring; the so-called functional regurgitation, *4* due to disease of the mitral valve with regurgitation, the organic murmur, *5* aortic stenosis, *6* pulmonic stenosis, *7* patent ductus arteriosus. We need not consider relative nor organic

tricuspid regurgitation, the first because it occurs only in advanced heart disease, the last because of its extreme rarity. In the first two cases, unless other abnormalities are present, one expects no change in contour or area of the frontal plane; in other words, since the heart is normal mechanically, its various chambers are of abnormal dimensions. Dilitation of the mitral ring with relative regurgitation is due to loss of tonus in the left ventricle, associciated with myocardial change. The total area of projection is increased, due mainly to change in the left contour. In its most typical form,there is obtained the so-called shoe-shaped heart with rather wide displacement outward of the apex, with little or no enlargement to the right or above. In organic lesion of the mitral valve leading to regurgitation, the primary result is a rise of pressure in the venous side of the pulmonary circuit and a hypertrophy of the right ventricle to overcome the increased resistance. The left ventricle also has an increased load to bear due to the loss of blood from its chamber in systole as a result of the incompetent mitral orifice. The result is an enlargement of both ventricles but mainly the right. There results an increase in area of the frontal projection with tendency to symmetrical enlargement. leading to the so-called triangular shaped heart. In aortic stenosis, the increased mechanical load falls on the left ventricle, leading to unilateral enlargement to even a more pronounced degree than that met with in relative mitral regurgitation. Finally in pulmonic stenosis, the load and subsequent hypertrophy is similar but affects the right instead of the left ventricle.

Efforts to determine with greater refinement and accuracy the development of different cardiac chambers have led to elaboration of x-ray methods with examinations in planes other than the frontal and special methods designed to gain some conception of the posterior contour of the organ. These methods have been of particular advantage in two directions, to determine hypertrophy of the left auricle in relation especially to mitral stenosis, and of the development of the left ventricle posteriorly in relation to early left ventricular myocarditis and aortic lesions. In the front plane projection the left auricle forms by the tip of its appendage only a small area of the upper contour of the left side lying between the left ventricular contour and the pulmonic arch. Abnormal development or dilation of the left auricle can be detected in many cases by careful determination of the length and convexity of this contour in the frontal plane. It is possible in the fluoroscope to mark the junction of the left ventricular and left auricular contour on the left side by observing the time of the pulsation, since one is systolic, the other presystolic. More accurate information is obtainable by a cardiac outline made in the lateral or left posterior oblique planes. Under these circumstances the posterior contour of the organ in its upper part is composed of left auricle. Normally a clear space is present between the upper posterior contour and the shadow of the spinal column. With increased development of the left auricle, this clear retrocardiac space is encroached upon or obliterated. The lower half of the posterior contour in these positions is formed by the left ventricle and enlargement posteriorly of this chamber results in a reduction or obliteration of the lower half of the retrocardiac space. A special method of interest to estimate the development of the left ventricle posteriorly has been devised by Bordet. It consists in determining the distortion of the left contour in the frontal plane by shifting the tube a known distance laterally. The extent of this distortion with fixed distance of the tube and screen will vary with the antero-posterior dimensions of the heart. Most of the left ventricle lies posteriorly and it is possible to obtain evidence of slight enlargement of this chamber by this method when the frontal area of projection is still within normal limits. The same method can be applied to the right auricle on the right frontal plane contour, but has less practical significance. The most important usefulness of these methods is the determination of the left auricular enlargement in mitral stenosis and slight grades of left ventricular hypertrophy in early left ventricular myocarditis and aortic lesions. In early mitral stenosis, so long as compensation is maintained by auricular hypertrophy alone, the frontal projection plane as determined by percussion of x-ray methods may be normal or even subnormal in area. It is true that in a few cases the enlargement of the left auricle can be inferred by an extension of dullness in the third left interspace or by a change in the x-ray contour in this region, but the change in early cases is rarely demonstrable. In early myocarditis definite eti-

clogy may be absent, symptomatology uncertain or even misleading, murmurs or auscultatory changes in heart sounds absent and the hypertrophy insufficient to increase the frontal plane contour beyond perhaps the upper limits of normal. Here the determination of the ventricular development in depth and a study of its anterior and posterior contour in the lateral positions are of considerable assistance.

It is customary to divide murmurs that one may hear over the region of the heart into *1* extracardiac, *2* accidental, *3* functional, and *4* organic. The extracardiac murmurs are comparatively rare and may be systolic or diastolic. So-called accidental murmurs, the term meaning nothing more than a lack of understanding of their cause, are very common and in the great majority of cases are systolic in time. Functional murmurs comprise mainly the systolic murmur of relative mitral regurgitation in left ventricular myocarditis, the systolic murmur of tricuspid insufficiency in failure of the right ventricle and the diastolic pulmonic or Graham Steele murmur in dilation of the pulmonic ring. The most common organic murmurs met with are the systolic murmurs of mitral regurgitation, the diastolic and presystolic murmurs of mitral stenosis and aortic regurgitation and the systolic murmur of aortic stenosis and aortitis. The presence of a murmur is always significant, but it may be said that never alone can the determination of a murmur constitute a diagnosis. The scope of this paper will not allow a discussion of the acoustic characteristics, the usual regions of maximum intensity and of transmission, and the influence of body position, respiration and muscular activity on the various types of murmurs, which are of assistance in determining their origin and significance, but I do wish to emphasize the fact that even the most careful study and description of murmurs, which should never be neglected, will not lead, in all cases, to a determination of their significance. Any one with considerable experience has heard diastolic murmurs of extracardiac origin closely simulating the murmur of aortic regurgitation, and the uncertainty and frequently misleading influence of systolic murmurs has been called attention to many times by many writers. The systolic murmur with a certain acoustic characteristic, with a certain position of maximum intensity and a certain transmission is far more likely to be functional or organic than another of a different type, but the rule is not absolute.

A point of very great importance in early cardiac diagnosis is the pulmonic second sound. Accentuation of this sound indicates a high tension in the arterial side of the lesser circulation and occurs especially in mitral regurgitation and mitral stenosis. It is of particular importance as a help in the determination of the significance of systolic murmurs. It should be remembered that accentuation of the pulmonic second sound occurs in various lung conditions and finally that in the more extreme grades of hypertension in the lesser circulation the pulmonic ring may dilate with softening or disappearance of the sound made by the valve closure.

Studies of the peripheral circulation should never be neglected in cardiac diagnosis. The most important single study is that of arterial pressure and in some cases this alone is the first clue to the correct diagnosis. Comparative palpation of the two radials and brachials should always be done. Determination of the presence or absence of the so-called capillary pulse by the application of a microscope slide to the mucous membrane of the lip and the presence or absence of the auscultory sound over the femoral artery, the sign of Duroziez, should form a part of every cardiac examination. The degree of stability of cardiac action in change of position, the influence of brief exercise and of respiration on the control of the heart rate and rhythm through the extrinsic cardiac nerves are other points to be noted. There are certain facts of especial interest which I should like to mention briefly at this place. The association of low diastolic pressure with a normal, subnormal or slightly increased systolic pressure, unstable rate control, capillary pulse, pistol shot sound, systolic murmur maximum in the second or third left interspace and with restricted transmission is, as we have seen, an exceedingly common complex in Grave's disease and in the group of cases classed as effort syndrome, neurocirculatory asthenia or irritable heart action. Particularly confusing is the occasional case of mitral stenosis combined with low peripheral vasomotor tone and the complex described above. These cases are frequently erroneously diagnosed as aortic regurgitation and this is not surprising in view of the fact that they present what is usually regarded as the classical picture of this disease.

Resort to accurate determination of cardiac size and contour is necessary to constitute the correct differential diagnosis. In one case the frontal contour may be normal or even subnormal in area while there is definite evidence of left auricular enlargement. In the other cases there is a normal left auricular contour and left ventricular hypertrophy, demonstrable usually in the frontal projection, and confirmed by a study of the posterior contour and the development of the left ventricle in depth.

Early in the application of galvanometric determination in the study of heart disease, Einthoven found that different types of organic heart disease which disturbed the normal muscle balance between the two sides of the heart, changed the type of the R complex of the electrocardiogram in certain leads. Two general groups have been recognized since this time, namely a progressive increase in the height of the R wave in the three leads, from lead I to lead III, and the reverse, with an increase in the S wave in lead III. The former change occurs in those conditions involving preponderant hypertrophy of the right ventricle, particularly organic mitral disease, the latter in conditions involving left ventricular hypertrophy, especially aortic disease and left ventricular myocarditis. If the R complex of the electrocardiogram is normally a delicate balance of the functional relationship of the two ventricles and their conductive systems, and altered by slight disturbance of this normal relationship, it would evidently be of the utmost value in detecting slight hypertrophy of the different chambers and through this fact a most important aid in diagnosis. Unfortunately, subsequent observations have failed to confirm this simple relationship between the form of the electrocardiogram and unusual development of any chamber of the heart. It is beyond the scope of this paper to go into this matter in detail. The most recent extensive work on the subject, that of Herrmann and Wilson[2], in which the form of the electrocardiogram during life was compared with the relative development of the two ventricles after death as determined by gravimetric comparisons with the normal heart, leads to the general conclusion that the relative weight of the two ventricles is only one of several factors which influence the form of the ventricular complex of the electrocardiogram. Other and perhaps more potent factors are variations in the position of the heart, the arrangement of the conduction system and disturbance in intraventricular conduction. While much more work is necessary to put this matter on a satisfactory basis, it seems to me that the evidence so far accumulated points to a definite value of the electrocardiogram in this connection. It is apparently still true that normal hearts under usual conditions rarely if ever depart from the so-called normal relationship of the R complex in the three leads. While many exceptions occur, signs of right ventricular preponderance are usually found associated with mitral disease and of left ventricular preponderance with left ventricular hypertrophy secondary to aortic disease, hypertension or myocarditis. The electrocardiagram would seem to have the usual relative value of many methods applied to diagnosis; it is by no means an infallible guide but in connection with other findings may be of considerable value in leading to or tending to substantiate a correct diagnosis. Its possible value should never be ignored in any case when there is any doubt in regard to the diagnosis. In addition to the importance of the electrocardiogram in respect to ventricular preponderance, it is of value of course in determining the nature of associated arrhythmias and conduction disturbances. In most cases the arrhythmias are readily classified by the ordinary methods of examination, but disturbances in the conduction system are usually undemonstrable by other means than the electrocardiogram. Two cases that I have recently examined have impressed me particularly in this connection. One case was a double mitral lesion with definite delay in auriculo-ventricular conduction, indicating an extension of the pathological process to some part of the conduction system and increasing the gravity of the prognosis. The other was an obscure case which by all methods of examination other than the electrocardiogram failed to show any abnormality. The electrocardiogram revealed bundle branch block, which so far as we know is practically always of leutic origin. In a number of cases the presence of signs of right ventricular preponderance has helped materially in the differential diagnosis between mitral stenosis and aortic regurgitation which may, as we have seen, be impossible by the ordinary methods of examination.

2. Herrman, J. R., and Wilson, F. N.: Heart, 1922, IX, 91.

I have tried in this paper to give, necessarily somewhat superficially, what I regard as the more essential points in early diagnosis of the more common types of chronic heart disease. I have attempted to emphasize first the importance of careful evaluation of etiology and symptomatology, second, the necessity of a general systematic routine physical examination, third the importance of accurate percussion, fourth, the value of a comprehensive x-ray examination in doubtful cases, and finally the significance of the electrocardiogram in diagnosis. The most generally neglected of the aids to diagnosis, I believe, is the x-ray. It is the one method which gives us, imperfect as it is at present, the most accurate knowledge of the form and contour of the organ, the type of information which I have tried to show is of most value in leading to a correct diagnosis. We do not hesitate to carry out a comprehensive x-ray study of gastrointestinal cases, and yet the information obtained has usually a less direct bearing upon the underlying pathology than in heart disease.

THE INTRACRANIAL COMPLICATIONS OF SUPPURATIVE SPHENOID SINUS DISEASE*

With a Report of Seven Cases

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In an investigation of the case records of Cook County Hospital for the decade from 1911 to 1920, inclusive, for intracranial complications of nasal accessory sinus disease, I found[1] that while the sphenoid sinus was less frequently diseased as compared with the other sinuses, it nevertheless gave the highest percentage of intracranial complications.

The sphenoid sinus was found diseased in 11 cases out of a total of 393 sinusitis cases, or in 2.8 per cent; while of the 11 cases, 7 or 63 per cent developed intracranial complications. On account of the technical difficulties in connection with the diagnosis of sphenoiditis, many of these cases are not recognized. This proved so in 6 of the 11 cases or in over 50 per cent; in 5 cases, the diagnosis was made at autopsy and in one case at operation.

It is not surprising, that suppurative sphenoiditis in proportion to its frequency is most often associated with intracranial complications, when we recall the intimate relationship of the sphenoid sinus to the base of the brain. The literature[2] records cases in which suppurative sphenoditis involved the oculomotor, trochlear, abducens and the first and second division of the fifth nerve, where these structures are in intimate relation with the cavernous sinus. Congenital bony dehiscences of the sphenoid sinuses are fortunately rare, but have been reported by Zuckerhandl[3], Spee[4], and A. Onodi[5]. The cavernous sinus, lying as it does against the lateral wall of the sphenoid sinus, is subject to infection from the sphenoid sinus through the bony wall, either from a dehiscence or from osteitis and necrosis of the bony lateral wall, or by extension through the venous or lymphatic route, from the sphenoidal veins which drain into the cavernous sinus, resulting in the production of a thrombosis of the cavernous sinus. This, fortunately, is a very rare complication of empyema of the sphenoid sinus. Chisolm and Watkins[6], in an examination of 50,000 surgical case records of Johns Hopkins Hospital, found only 8 cases of thrombosis of the cavernous sinus of which only one was due to sphenoid empyema. Sphenoidal sinus empyema occurs sometimes in cases of cerebro-spinal meningitis and was found associated with fatal cases of influenza.[7]

An examination of the 7 cases reported herein, with intracranial complications, shows, that the diagnosis of suppurative sphenoiditis was made in one case at operation, before the complicating meningitis developed; in another case, the diagnosis was made clinically before the onset of the complicating meningitis; in the remaining 5 cases, the diagnosis was not even suspected, and was only made at autopsy.

Diffuse purulent lepto-meningitis is the most common complication of suppurative sphenoiditis; it occurred in 6 of the 7 cases or in 86 per cent. Pachymeningitis occurred in one case, and brain abscess (temporo-sphenoidal) in one case. No case of cavernous sinus thrombosis occurred.

Five cases or 70 per cent were associated with ethmoid sinus disease, 3 or 43 per cent with frontal sinus disease, 1 or 14 per cent with maxillary sinus disease, 1 or 14 per cent with suppurative otitis media, 2 or 30 per cent with orbital cellulitis, 2 or 30 per cent were not associated with disease of any other accessory nasal sinus.

*Read before Section on Eye, Ear, Nose and Throat, Illinois State Medical Society, Chicago, May 17, 1922.

In the anatomical diagnosis of suppurative sphenoiditis no mention is made as to whether one or both sinuses were involved.

Diagnosis. A thorough examination should be made by a competent rhinologist and otologist in all cases of meningitis, epidural abscess or cerebral abscess, in order to determine, if possible, the portal of infection. The difficulties of making a comprehensive rhinologic examination are much greater than in an aural examination, and therefore more frequently unsatisfactory. A good skiagraph is a necessary adjunct in every case. In a delirious, stuporous or comatose patient, the difficulties are much enhanced. A satisfactory nasal examination is often made difficult or impossible by the presence of a deflected septum, hypertrophied turbinates or polypi. If there is no pus in the nose or nasopharynx, it does not necessarily signify that the sinuses are negative, because pus from the sinuses may be retained and discharged periodically into the nose or nasopharynx. In the bilateral sinusitis cases, it is often difficult to ascertain whether the infection has extended into the cranial cavity from the right or left side. Likewise, it may be very difficult, in bilateral multiple sinusitis cases, to determine whether the infection has extended into the cranial cavity from the sphenoid or from some of the other accessory nasal sinuses.

Otitic infection is responsible for 5 per cent of the deaths due to meningitis from all causes,[8] while 1 per cent are due to nasal infection, a total of 6 per cent due to otitic and rhinologic disease.

The diagnosis of meningitis of focal origin can be made with certainty, if the portal of infection is found and tuberculous, luetic and meningococcic meningitis can be excluded.

Clinically, suppurative meningitis should only be diagnosed when the culture of the spinal fluid is positive for bacteria.

The cases of meningitis in which bacteria have not yet been found in the spinal fluid on culture and in which there is an increase in the pressure, cells, and globulin, has been termed "Meningitis Sympathetica" by Plaut and Schottmuller.[9] This turbid but sterile spinal fluid is the result of meningeal irritation, usually an adjacent aural or nasal focus of infection. The majority of the cases recorded as recoveries from supperative meningitis are of this type.

Spinal puncture was performed in six of the seven cases; in four cases or in 67 per cent. bacteria were found on culture of the spinal fluid; in five cases bacteria were found in the direct smear; and in one case no bacteria were found either on culture or by direct smear. Clinically, the latter should be classified as a case of sympathetic meningitis, as the spinal fluid was under increased pressure, turbid and sterile; and the four cases in which bacteria were found on culture, as cases of supperative meningitis.

Treatment: Prophylactic treatment is the only successful treatment in most of these cases. This implies an early diagnosis and rational treatment of the sphenoid sinusitis. We are powerless to prevent a fatal issue by any known treatment, in cases complicated by diffuse suppurative meningitis, as in these cases not only the meninges of the brain, but also of the spinal cord are involved. It is most unfortunate that the majority of the meningitis cases of septic origin are of this type; in the sympathetic meningitis cases the removal of the source of infection will lessen the meningeal irritation and often result in recovery. Pachymeningitis, epidural and brain abscess cases should be given the benefit of early surgical interference, as it is in these cases that surgery can do the most good. If epidemic meningitis is suspected, do not wait for the bacteriological report of the spinal fluid, but administer the specific or anti-meningococcic serum intraspinally at once. The intraspinal injection of a serum independent of the specificity of the serum for the infecting micro-organism has a definite therapeutic value, due to the tissue reaction caused by the foreign proteid, this is a protective mechanism[10] which results in a change in the spinal fluid, identical with that found in sympathetic meningitis viz., increased pressure, cells, mostly p.m.n., and globulin.

The following is a brief report of the seven cases.

Case No. 1. M. 67, 1916, age three years, admitted July 3, 1916. No history is recorded. Examination shows an area 3 m.m. in diameter on the upper left eye lid, near the internal canthus, which is discharging pus. Temperature 98, pulse 136, respiration 24. Diagnosis: Orbital abscess. X-ray report was negative. Operation, July 31, 1916. Incision through the brow exposing the superior orbital wall, disclosing a perforation of the orbital roof. This was explored resulting in a large amount of pus being evacuated. The sphenoid sinus was also explored and found full of pus. Two days after operation, T. 104, head retracted, with emesis and the following day the spinal fluid was

cloudy, globulin and albumin positive, P.M.N. increased, and positive for streptococci. Patient died three days after operation. Diagnosis, streptococcic meningitis.

Comment: The perforation opened into the frontal sinus. The ethmoids no doubt were also involved as the sphenoid was found full of pus. The meningitis may have been a post-operative complication. Orbital cellulitis and abscess cases should be investigated for any evidence of nasal accessory sinus disease, especially frontal and ethmoid involvement.

Case 2. M. 14, 1917, age 24 years, admitted March 24, 1917, in a semi-comatose condition. He had been sick about a week and complained of severe headache. Examination shows Temperature 100, Pulse 84, Respiration 24. Has deep scar over left side of forehead, ptosis of left eye lid, left pupil is larger, head is retracted and neck rigid, also abdominal and skeletal muscles rigid and lies in orthotonus position, double Kernig and Brudzinski present, Babinski absent, all normal reflexes accentuated, blood and spinal Wassermann negative, spinal fluid cloudy, pressure increased, and smear shows Gram positive diplococci.

An initial injection of 30 c.c. of anti-meningococcic serum was given, but on receiving the report from the culture as negative for meningococci, the specific treatment was discontinued.

The patient died five days after admittance.

Anatomic diagnosis: Acute fibrino-purulent lepto-meningitis, suppurative sphenoidal and ethmoidal sinusitis.

Comment: This case was diagnosed epidemic meningitis, but this was eliminated when the report of the spinal fluid was negative for the meningococcus. No attempt was made to ascertain whether the meningitis was of nasal or aural origin. However a rhinological examination in a delirious or comatose patient is often unsatisfactory or impossible.

Case 3. M,8, 1917, age 13 years, admitted Dec. 14, 1917, with the diagnosis of suspect typhoid fever. Onset five days ago. She complained of constant headache, dizziness, nausea and vomiting.

Examination showed Temperature 101.8, Pulse 88, Respiration 22. There was a grayish discharge from the naso-pharynx and the pharynx injected. After twelve days the temperature became normal and she did not complain of anything. Diagnosis Influenza. Five days later the patient complained of severe right frontal headache, the pain starting in the frontal and radiating to the occipital region. There was no tenderness over the frontal or maxillary regions, and trans-illumination was negative. The left middle meatus contained pus and a naso-pharyngeal discharge was present. The tonsils were hyperemic and the nose and throat cultures were negative. The Widal was negative, W.B.C., 28,550. All normal reflexes were present except the abdominal, Kernig's sign was negative. No nystagmus or strabismus present. The spinal fluid was turbid and under increased pressure. 1,900 cells, mostly P.M.N., globulin positive, smear shows Gram positive cocci, which was negative in the first puncture, when epidemic cerebro-spinal meningitis was suspected and anti-meningococcic serum was administered. She continued to complain severely of headache and became irrational. She was examined thoroughly for ear and sinus atrium of infection but nothing found. The day before she died, another spinal puncture was made which showed bacteria in chains, that proved to be streptococci on culture. Since her entrance into the hospital the following diagnoses had been made, typhoid fever, influenza, tonsillitis, sinusitis, epidemic cerebro-spinal meningitis and streptococcal meningitis.

The autopsy showed sub-acute streptococcal tonsillitis, streptococcal sphenoidal sinusitis, diffuse purulent lepto-meningitis, edema of the brain and hyperemia of the pia-arachnoid of brain and cord.

Note: The pus obtained from the sphenoidal sinus and that obtained from the exudate over the brain stem contained the same strain of streptococci as was isolated from the spinal fluid before death.

Comment: No mention was made in the history of rigidity of the neck, pathologic reflexes, ophthalmoscopic examination or x-ray examination of the nasal sinuses.

Case 4. M,17, 1919, age 46 years, admitted Sept. 18, 1919, with the diagnosis of tuberculous meningitis. A history of cough, night sweats, headache and stiff neck were obtained. The headache had been present for the past six weeks, involving the whole head but especially the occiput.

Examination shows, Temperature 105, Pulse 120, Respiration 20. Pupils dilated and unequal; do not react to light. Nasal and aural examinations are negative. Rigid neck and opisthotonus are present, the knee jerks are spastic, ankle clonus, Kernig, Babinski and Brudzinski are positive. The spinal fluid is turbid, pressure is increased, cells 7,580 per c.m.m., Nonne and Ross-Jones are positive, P.M.N. 84 per cent, smear shows numerous diplococci. Diagnosis: Meningococcus or pneumococcic meningitis. Anti-meningococcic serum was given, 30 c.c. intra-spinally and 15 c.c. intravenously. The culture of the spinal fluid showed streptococci. The patient died two days after admittance.

Anatomic diagnosis: Purulent lepto-meningitis (streptococcic), purulent otitis media, sphenoid, ethmoid, and frontal sinusitis.

Comment: The nasal and aural examinations were perfunctory. A radiographic study of the accessory nasal sinuses should have been made.

Case 5. M,18, 1919, age 61, admitted Sept. 17, 1919, with the history that he became sick yesterday, with a sore throat, followed by chills, fever, cough and weakness. Examination shows patient is stuporous, Temperature 103.4, Pulse 88, Respiration 22, there is no aural discharge or tenderness present over the mastoid, the eyes show an occasional transitory strabismus, the neck is rigid, the knee jerks

are present, Brudzinski positive, Babinski, Gordon and Oppenheim are negative. W.B.C. 26,000. Spinal fluid, turbid, pressure increased, cells 25,000, mostly P.M.N. The stained smear shows a few extra-cellular and intra-cellular diplococci, Gram positive. The culture shows a Gram positive, inulin fermenting, capsule bearing diplococcus which is the pneumococcus.

Note: Further history was obtained from a physician who treated him for sinus trouble. He stated that his ethmoids and sphenoids were in a necrotic condition as shown by the probe.

The patient died two days after admittance.

Anatomic diagnosis: Suppurative sphenoidal and ethmoidal sinusitis, acute suppurative lepto-meningitis.

Comment: This is the only case of the series in which the correct diagnosis was made clinically and the atrium of infection located.

Case 6. B.A.,6, 1915, age 29 years, admitted March 19, 1915, complaining of pain in the left frontal region and swelling of the left orbital tissues and eye lids of one week's duration. Gives a history of a similar attack two weeks ago which subsided, and of having a chronic nasal discharge with nasal obstruction and occasional sore throat.

Examination shows Temperature 104, Pulse 88, Respiration 22, W.B.C. 39,5000. The left eye lids are closed with swelling and there is exquisite tenderness over the left frontal sinus, Kernig and clonus are absent. The x-ray report states "the left frontal sinus is more opaque than the right, the left ethmoid and antrum is very much increased in density and a very noticeable feature of the case is a very large sella turcica which does not appear normal.

Operation: March 19, 1915. A curved incision was made over the left eye brow, the frontal sinus exposed, showing the bone over the sinus dark and softened. The sinus was opened and drained through the nose with gauze. Two days later middle turbinectomy and curettage of the ethmoid cells was done, during which pus discharged. Eye examination, March 25, 1915, shows edema of lids and bulbar conjunctiva, lid does not quite close over cornea, purulent secretion over everted conjunctiva of both R and L, cornea clear, movement slight in all directions, pupils and fundus are negative. On April 1, 1915, Temperature 102.2, Respiration 20, Pulse 120, and bilateral serpiginous ulcers of the cornea were present, and on April 4, 1915, it was observed that the mouth was full of pus and that it was evidently coming from the nose. Death occurred 16 days after admittance.

Anatomic diagnosis: Marked suppurative inflammation of the sphenoidal and ethmoidal sinuses with abscess formation and extension into the right ventricle and temporo-sphenoidal lobe; secondary suppurative inflammation of the left frontal and maxillary sinuses.

Comment: No mention was made of any diagnosis, but we must infer that certain pathologic conditions were recognized. The orbital cellulitis was self evident, the frontal and ethmoid sinusitis were also recognized because an external frontal sinus and an internal ethmoid operation were performed. No mention was made of further investigation or of treatment of the maxillary sinus in spite of the positive x-ray evidence. A brain abscess evidently was not thought of because a neurological examination was not made, but there were not any obvious symptoms or signs to suggest the presence of a brain abscess. Incidentally the abnormally large sella turcica, one of the diagnostic signs of pituitary tumor, did not show any pituitary tumor at autopsy. It is always a good rule to follow, that whenever the orbit or the intra-cranial cavity are either threatened or involved in fronto-ethmoidal suppuration, the extra-nasal operation is indicated and intra-nasal operations are contraindicated.

Case 7. OMA,7, 1919, age 39 years, admitted Jan. 18, 1919, with the history of having a cold for the past week, consisting of a cough and rhinitis. Two or three days ago he developed a very severe headache which was located in the back of the head and neck. He became delirious this morning and this afternoon had a severe chill which lasted five minutes and has been irrational since. Previous history: Has been deaf in right ear since childhood and has had ear aches off and on for the past two or three months.

Examination: Temperature 102.8. Right purulent otitis media present, no mastoid tenderness or redness present. No mention was made of an examination of the left ear. The left pupil is twice as large as the right and does not react to light. The neck is rigid, Kernig and Brudzinski are positive, Babinski suggestive, Gordon and ankle clonus negative. The spinal fluid is turbid and is under increased pressure, cells 5,000 per c.m.m., P.M.N., four plus; no organisms were found in the smear or culture. W.B.C.=17,000.

Diagnosis: Meningitis secondary to suppurative otitis media.

Anatomic Diagnosis: Purulent otitis media (bilateral), purulent dural sinus thrombosis, putrid fibrino-purulent lepto-meningitis, basal pachymeningitis, necrosis of the right petrous bone, pus distended right Eustachian tube, and purulent sphenoiditis.

Comment: This is a case where we have coincident aural and nasal focal infection, but the case is undoubtedly one of otitic meningitis as the preponderance of evidence of the autopsy shows. Clinically, this was a case of meningitis sympathetica as the spinal fluid was sterile.

CONCLUSIONS

1. Suppurative sphenoiditis is more common than is generally supposed, and many of these cases are unrecognized and consequently go untreated, which later develop fatal intra-cranial complications.

2. The sphenoid sinus is the least frequently diseased nasal accessory sinus, yet it gives rise to the greatest percentage of intracranial complications.

3. The most frequent intracranial complication of suppurative sphenoiditis is diffuse suppurative lepto-meningitis.

4. The successful treatment of the intracranial complications of suppurative sphenoiditis is prophylactic.

5. In all cases of meningitis of unknown origin, a competent examination should be made for evidence of aural and focal infection.

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PERFORATIVE APPENDICITIS*

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In 1867 Willard Parker, of New York, treated four cases of appendiceal abscess and phlegmon of the abdominal wall by simple incision and drainage. This operation was done on numerous occasions between that time and 1888 when, for the first time, the more modern operation of removing the appendix before a phlegmon of the abdominal wall had formed was done. Since 1888 appendicitis in its various phases has been discussed by our foremost authorities and it might seem at first glance a well-threshed-out subject. However, the number of people who suffer each year from this disease and the mortality rate in cases of perforated appendix warrant the attention and interest of the general practitioner and of the surgeon alike.

In our clinic in the past five years, from April 1, 1917, to April 1, 1922, we have operated on sixty-five cases of peritonitis caused by ruptured appendix. Of this number forty-six were males and nineteen females. The ages ranged from twenty-two months to seventy-two years. There were five deaths, making the mortality rate 7.7 per cent. A sixth death occurred two months and eight days after the primary operation and one day after a second operation for closing a small fistula. The fistula did not connect with the bowel and drained but a few drops each day. The man was feeling well otherwise but the fistula annoyed him and he persuaded us to close it. The fistulous tract was dissected out and the wound closed. The patient went into collapse on the afternoon of the day he was operated upon; he became very white and the pulse grew small and rapid. The area about the wound became very red, swollen and painful. Twenty-four hours after operation, the stitches were removed and the wound opened. A small quantity of clear bloody serum escaped. The patient died at the end of thirty-six hours, apparently from an acute streptococcus infection.

Two of the patients who died were boys, one aged three and the other seven. Both developed an acute double parotitis which suppurated a few days before death in each case. One death occurred in April, 1920, and the other in July of the same year. Among other complications which arose were two postoperative pelvic abscesses that had to be drained. Phlebitis in the limbs developed in several cases. One woman had a double phlebitis. Our records are not complete in all cases and so I cannot give the exact number of cases in which this complication occurred. Neither have I received a sufficient number of replies to my inquiries to be able to state how many postoperative hernias have resulted.

A rather unusual complication occurred in the case of a girl of seven where the initial symptoms appeared during an attack of measles. As soon as the measles subsided, the patient entered the hospital with a diagnosis of acute appendicitis. At operation, a perforated post-cecal appendix was found in the center of a walled-off abscess which contained about two ounces of thick, creamy pus. The appendix was removed and two cigarette drains put into the abscess cavity. On the tenth day, the patient had a severe chill which lasted almost an hour. At the same time, she became very cyanotic. For the next three weeks the child had from two to four chills daily. During that entire time, the wound was well open and was draining freely. There was no evidence of peritonitis nor of localized abscess and there was

*Read before Elgin Academy of Medicine, April 26, 1922.

no pus in the urine. Our diagnosis was a phlebitis of the portal vein. Toward the end of the third week, the patient was given a small dose of neoarsphenamine and after that she had only two slight chills. She was discharged from the hospital on the forty-sixth day in good condition.

In the diagnosis of peritonitis from perforated appendix, it is well to recall the statement recently made by W. W. Grant of Denver that "The art of diagnosis is not a product of the laboratory but of the sickroom." First of all it is important that a careful, detailed history be obtained, especially of the present illness. It is not only necessary to learn what symptoms have occurred but it is also highly essential to learn what has been the order of their occurrence. Great stress was laid on this point by the late John B. Murphy who called attention to the fact that in the usual and typical acute appendicitis the initial symptom is a generalized abdominal pain. This is followed, in order, by nausea and sometimes vomiting, a rise in temperature, increasing leukocytosis and, finally, a localized tenderness over the appendiceal area. Other seemingly minor points which are brought out in the history may be of utmost importance in determining the cause of the peritonitis. Appendicitis patients seldom vomit more than once or twice. In cases of ileus, on the other hand, vomiting continues and increases in frequency. In perforation of gastric or intestinal ulcer there is usually a history of some previous condition and the pain comes on suddenly and is more intense. This is also true in the case of rupture of an ovarian cyst which occurs without warning and when the patient has been feeling perfectly well.

Of equal importance in arriving at a diagnosis is a thorough, painstaking physical examination. Perhaps I should put that in the plural, for in many cases one examination is not sufficient and only after repeated examinations can a diagnosis be reached. When a case is at all in doubt, the patient should be gone over thoroughly and carefully each time that he is seen and the findings checked up. Often, too, conditions may develop in the course of a few hours that will have a great deal of bearing upon the diagnosis. Such symptoms would be missed entirely if only one examination were made. Where the history is not typical the physical findings become of even greater importance for then we are compelled to depend upon them almost entirely for a diagnosis. Four of our cases began with a diarrhea. And in the case mentioned above, in which the onset of pain occurred during an attack of measles, the abdominal pain was at first attributed to the measles and it was only after repeated examinations of the abdomen that we were led to the conclusion that the pain was due to a localized infection in the peritoneal cavity. In many cases, because of the intense pain a patient is suffering, it is impossible to obtain an accurate account of the symptoms. Here, again, we must rely on the results of physical examination for our diagnosis.

In any acute condition the diagnosis is of such moment as to demand the consideration of all obtainable facts and so the laboratory examination should not be neglected, although, in my opinion, it should be made only after an accurate and complete history has been taken and a thorough and painstaking physical examination made. A leukocytosis does not reveal the source or location of the septic focus but it may show the degree of reaction to any infection. On the other hand, a normal count or leukopenia would point to some other type of crisis than that caused by infection. The habit of making routine laboratory examinations is a good one to acquire. Certain positive findings may change the entire picture of a case. I well recall the case of a man suffering from acute abdominal pain which apparently was caused by an acute appendix. Laboratory examination showed that the urine was loaded with albumin and casts. Treatment for the nephritis promptly relieved the abdominal pain. In another case it was only after an x-ray plate was made of the chest that a definite diagnosis could be reached.

This was one of those cases which show a cough and other respiratory symptoms which made it necessary to rule out pneumonia so frequently known to be the cause of a referred pain in the abdomen. The patient, a boy of twenty-two months, was under observation for several days. An acute appendicitis was suspected when the patient was first seen but the boy would cry and carry on so every time that any one approached his bed that it was impossible to get physical findings that were of any value. This patient was seen by Doctor Brenneman of Chicago. In the future, in such cases, I shall give enough anesthesia, preferably chloroform, to get complete re-

laxation so that a satisfactory examination can be made and an earlier diagnosis reached.

The prophylactic treatment of perforative appendix and peritonitis depends almost entirely upon an early diagnosis of appendicitis and prompt institution of proper treatment. While it is possible to diagnose acute appendicitis, it is not possible to see the extent of the pathology and to say that, without surgery, the patient will recover from the attack without rupture of the appendix and consequent peritonitis. Therefore, it seems rational to advise immediate operation in all cases as soon as a diagnosis has been made and the patient gotten to a hospital where a laparotomy can safely be done. Patients refusing surgical treatment after a true understanding of conditions should be kept quietly in bed and an ice-bag applied over the appendiceal area. As intestinal peristalsis increases the spread of infection, all food should be withheld and no cathartics given. Lay people, especially, are altogether too prone to give an ounce of castor oil or Epsom salts as soon as a person in the household complains of abdominal pain and by so doing, they defeat Nature's efforts to check peristalsis. In this series that I am reporting, perforation seems to have occurred in a few cases after the repeated giving of such cathartics. The giving of one or two ounces of hot water every hour seldom stimulates peristalsis or causes vomiting. This should be supplemented by the giving of fluids by proctoclysis or subcutaneous injections. Enough opium should be used to produce rest.

After perforation occurs, the only recourse is surgery. The only question is as to the proper time for operation. In cases where the peritonitis is still localized, immediate operation is the thing. But in the cases of patients, adults at least, who do not come under observation until from twenty-four to thirty-six hours after perforation has taken place and in whom there is evidence of a spreading peritonitis—a tight, rigid abdomen, small, rapid pulse and an anxious expression of face—it is a question whether it is advisable to add the further shock of an operation without first giving Nature a chance at repair.

For many years medical men have been divided into two factions on this point, one believing in immediate operation in all cases regardless of the degree of the peritonitis, and the other believing in delayed operation, after the teaching of Ochsner. In this connection, I should like to call your attention to a sentence from an editorial by W. J. Mayo which appeared in the February, 1922, issue of *Surgery, Gynecology and Obstetrics* in which he covers this subject thoroughly. Among others things he remarks that "The results of plunging into the abdomen too late to adequately cope with the cause of the peritonitis and too early to aid Nature's attempt at repair have too often resembled the proverbial 'Green Christmas' in fattening the graveyard."

In our series of cases, it is of interest to note that the five deaths occurred in patients who were operated upon in from two to five days after they first took sick. Many of the other patients were operated upon eight, ten and even twelve days after the beginning of the attack. In these cases there were well walled-off abscesses. The periods of drainage were short and, without exception, recovery was uneventful. Of the five deaths, one occurred on the first day after operation, one on the ninth, one on the fourteenth, one on the fifteenth and one on the nineteenth. It is apparent that these patients seldom die immediately after operation but that they live from one to two or three weeks with an extensive peritonitis, often with little drainage, and finally die of an exhaustion due to the long-continued peritonitis.

It seems wiser, then, not to operate upon patients when they are already shocked from a spreading peritonitis and are in what some men have called the negative phase but better to wait until they have again reached a positive phase when there is evidence of increasing resistance and that Nature has succeeded in her attempt to localize the peritonitis and wall off an abscess.

In the treatment of an extensive peritonitis, hot, moist packs to cover the entire abdomen seem better than the ice. The packs should be actually hot, not merely warm, but just as hot as the patient can bear them. Two or three quarts of fluid should be given every twenty-four hours. In some cases, it is possible to give the patient an ounce of hot water by mouth every hour without increasing peristalsis or producing vomiting. Where this is possible, it not only provides a way for getting part of the necessary liquid into the system, but it allays thirst and makes a patient more comfortable. In my judgment, an ounce of water taken by mouth, as Na-

ture intended it to be taken, will do more good than twice that amount given any other way. Enough more fluid to make up the desired amount must, of course, be given, either by proctoclysis or subcutaneous injection. As stated before, enough opium should be used to make the patient comfortable and check peristalsis. If there is any gastric distress—nausea, vomiting, or frequent eructations—gastric lavage should be done often enough to give relief and it will be found far more effective than enemas or the rectal tube. C. H. Mayo has remarked that a stomach tube gracing the neck of the surgical interne is more useful than the stethoscope that is usually to be found there.

When improvement occurs under this plan of treatment, operation may well be delayed for several days or until there is an evident walled-off abscess. However, when there is no apparent improvement at the end of thirty-six or forty-eight hours and death seems likely in any event, I am convinced that then the patient should be given the chance of benefit from surgical intervention.

In infants and children, Nature seems less able to localize the peritonitis and wall off an abscess and to them I believe that early operation gives the most hope.

Operative technic I shall not discuss; for I believe that every surgeon develops an operative procedure of his own and that this will give best results in his hands. I am in hearty accord with W. W. Grant when he says in his paper on "Acute Conditions in the Abdomen" that "Only in exceptional cases should there be any doubt as to the importance and advisability of excising the focus of infection. Drainage is necessary and if the primary focus of infection is not removed, convalescence is delayed, drainage prolonged and recovery rendered more doubtful."

Cigarette drains have proved very satisfactory in our experience. We use two or three rather large ones, rolled loosely of gauze and rubber dam. After the drainage tract has formed—in twenty-four to forty-eight hours—one of them is removed to give more space for drainage. Many authorities agree that, when using a rubber tube, drainage occurs around the tube rather than through the lumen. This seems likely and, coupled with the fact that cigarette drains do not cause pressure necrosis, probably accounts for their wide-spread use.

As soon as our patients awaken from the anesthetic they are placed in the Fowler position for forty-eight hours and after that time they are encouraged to lie flat and as far over on the right side as possible, for hour intervals, several times each day. This seems to promote drainage. Large, hot, moist dressings wrung from saturated boric acid solution are used to cover the entire abdomen. These are changed every two to four hours. Treatment of the peritonitis is rigidly pursued as outlined above and all cathartics withheld as long as any peritonitis exists.

In conclusion, the points that I have tried to emphasize are these:

First, inasmuch as the prevention of peritonitis from ruptured appendix is only possible through the early diagnosis of appendicitis and immediate removal of the appendix, we should spare no effort to obtain all facts, from history, physical examination and laboratory, which will enable us to make such early diagnosis.

Second, in cases where an extensive peritonitis has developed and the patient is shocked, it seems advisable to follow the Ochsner plan of treatment and delay operation until Nature has made an attempt to repair.

Third, since peristalsis causes the spread of infection, it is highly important that all food be withheld, that no cathartics be given and that sufficient opium be used to check the peristaltic action.

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ATYPICAL EXOPHTHALMIC GOITER

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In the presence of the four cardinal symptoms, there is no disease in the domain of medicine that is diagnosed with greater ease than Graves' disease. Even the layman knows that exophthalmos and goiter mean exophthalmic goiter. On the other hand, in the absence of bulging eyes and large neck, there is no disease that is more difficult to diagnose. Within recent years we are realizing that there are more cases of Graves' disease in our midst than were ever suspected. This is due to the fact that there were great numbers of atypical forms of the affection which were unrecognized and therefore misdiagnosed. Early and aberrant Graves' disease, because of an

absence or the questionable presence of exophthalmos and goiter, were frequently treated for various other affections presenting a few clinical features in common with Graves' disease. We must therefore be on our guard, for Graves' disease, because of its varied and widespread symptomatology, is capable of assuming more aberrant forms resembling a greater number of other affections than any other disease known to medicine.

For example, the usual form of the affection must be differentiated from the following conditions, each of which presents features in common with Graves' disease, which features are herein mentioned:

Toxic adenoma, as this condition presents enlarged thyroid, increased basal metabolism, wasting, nervousness, weakness, tachycardia, and often dermographia.

Incipient pulmonary tuberculosis, as in this condition there exist increased basal metabolism, weakness, wasting, hyperidrosis, an increased afternoon temperature, increased respiratory rate, diminished respiratory expansion, heart hurry, and often dermographia.

Diabetes mellitus which presents, in common with Graves' disease, an increased appetite, increased basal metabolism, wasting, weakness, glycosuria, and hyperglycemia.

Effort syndrome which presents emotional disturbances, weakness, loss in weight, dermographia, transitory heart hurry, nervousness, and occasional hyperidrosis.

Hysteria and *neurasthenia* which present emotional disturbances, weakness, transitory heart hurry, digestive disturbances, and often hyperidrosis and dermographia.

Paroxysmal tachycardia which presents afebrile tachycardia, marked weakness, nervousness, and cardiac distress.

Nervous indigestion which presents digestive disturbances, nervousness, occasional cardiac discomfort, weakness, and loss in weight.

In atypical cases of Graves' disease we are most apt to go astray in diagnosis. The following diseases may be simulated:

Biliary disease. A case recently came to my attention in a young woman after she had been operated on for cholelithiasis. At operation the biliary tract was discovered to be entirely normal. A more intensive examination of the patient proved her to be an oldstanding case of atypical Graves' disease.

Acute appendicitis. Not only does atypical Graves' disease present crises which are concentrated upon the biliary tract as in the instance just mentioned, but the same may occur in the gut, more especially at the right iliac fossa, closely simulating an attack of acute appendicitis. Operation in cases of this sort may not only be a useless procedure but may accentuate the Graves' syndrome through surgical shock. Careful efforts at diagnosis will obviate such errors.

Major psychoses. An atypical Graves' disease (and indeed a typical one as well) may show an accentuation of mental symptoms, for in each patient the most vulnerable part of the body suffers the most, and in these instances the psychic area is the seat of crisis. Not only do we frequently observe in the various asylums a percentage of inmates who present the earmarks of Graves' disease, but the very first startling evidence of the disease may assert itself in the accentuation of the emotionalism, ambitions, and uncanny cerebration closely resembling not only dementia praecox but paranoia and other major psychoses. Occasionally, a sudden outburst of maniacal delirium or acute dementia may precede the other outspoken evidences of atypical Graves' disease. The lesson to be drawn is obviously the importance of a painstaking physical as well as mental examination in all patients asked to be committed to an asylum, with a view to ruling out Graves' disease.

Addison's disease is frequently simulated by atypical Graves' disease when the latter presents universally distributed areas of pigmentation, a not uncommon occurrence.

Spinal disease, especially paraplegia, is occasionally thought of when a patient with Graves' disease finds his legs suddenly give way from under him while on the street, and is obliged to be taken to a hospital in a state of apparent paralysis of both legs. Within a half hour, however, the patient is again able to walk as before. This symptom occurs more often in men than in women, and is most commonly prevalent in those instances of Graves' disease in which the patient complains bitterly of weakness in the legs.

The text-books of medicine are partly responsible for some of the confusion in diagnosis. In most volumes, the definition of Graves' disease

includes distinct exophthalmos and goiter as essential to diagnosis. These two signs constitute half the disease, since they are regarded as two of the four cardinal signs. Another error is the inclusion of the term hyperthyroidism as a synonym of this disease; this is an implication of the precise etiology of the disease when, in truth, there is still very much to be learned regarding its pathogenesis. Hyperthyroidism, though a probable constituent of the syndrome of Graves' disease, is not the cause of the affection, but incident to the widespread pathogenesis and clinical manifestations. All efforts to produce Graves' disease artificially through the administration of thyroid substance have failed. The administration of large doses of thyroid extract, though capable of producing hyperthyroidism, is incapable of producing Graves' disease.

To those who have made this disease their object of attention, it seems that the definitions commonly employed in text-books fall short of a comprehensive conception of the clinical syndrome and are therefore misleading. In the light of the present knowledge of the constancy and inconstancy of certain signs and symptoms of Graves' disease, it would seem that the following definition would be acceptable: *Graves' disease (Basedow's disease, Parry's disease, Flajani's disease) is a chronic, rarely acute affection apparently due to a dysfunction of the endocrine organs and of the vegetative nervous system, characterized by increased catabolism, weakness, wasting, emotional disturbances, afebrile heart hurry, tremor, dermographia, and frequently by a varying degree of exophthalmos and thyroid swelling.* From this definition it can be seen that 1. the constant evidences of the clinical picture are plus basal metabolism, weakness, wasting, emotional disturbances, afebrile heart hurry, tremor, and dermographia; and 2. the inconstant evidences are exophthalmos and goiter.

It is occasionally asserted that the patients without exophthalmos and without goiter are not really suffering with Graves' disease but with some other affection. It may just as well be stated that a patient with a central pneumonia is not suffering with pneumonia but with some other disease, simply because the physical signs are not typical; likewise that typhoid fever without rose spots and with an unusual temperature curve is not typhoid.

Aside from the absence of exophthalmos and goiter in a goodly percentage of patients, there are those who present goiter without exophthalmos, others who present exophthalmos without goiter, and still others who present unilateral exophthalmos. Again, we might observe a swelling of but a portion of the thyroid, the remainder of the organ being apparently normal. And though we expect all patients to appear emaciated, there are some whose weight is normal and others who are indeed obese. The atypical case of the disease, then, is not at all exceptional in the experience of those who devote much time to a study of these patients.

Exophthalmos, the rather dramatic and startling sign, is due to irritation of the cervical sympathetic which in some patients is involved to a lesser extent than in others. The absence of exophthalmos in a given patient can be explained by the fact that the cervical sympathetic is not sufficiently stimulated or irritated by the toxins of the disease to yield proptosis. There is really no dividing line between an absence and presence of exophthalmos, neither is there a dividing line between a thyroid apparently normal and one obviously enlarged. Exophthalmos is occasionally a matter of pure personal equation on the part of the diagnostician, and the same may be said of the size of the thyroid. The course of ocular events in a patient with Graves' disease may be (a) apparently normal eyes, (b) a sparkle of the eyes on attention, (c) continuous sparkle of the eyes, (d) slight exophthalmos on attention with sparkle in the passive attitude, (e) continuous slight exophthalmos increased on attention, (f) moderate exophthalmos, (g) marked exophthalmos, and (h) extreme exophthalmos. Note that there is no strict line of demarkation indicating where the eye ceases to be normal and exophthalmos begins. Again, in most patients classified as not having exophthalmos, the eyes may be unduly brilliant, especially on attention, and in practically all these patients there is either a typical or a larval von Graefe sign to be elicited. Furthermore, we cannot ignore the percentage of cases in which one eye is apparently normal and the other distinctly exophthalmic. Shall we say that one half this patient is suffering with Graves' disease and the other half with some other affection? Also, it cannot be denied that many patients present exophthalmos rather late in the disease. Shall we

say that prior to the development of the exophthalmos the patient was suffering with some other disease?

The absence of thyroid enlargement can also be explained on the grounds that though there exists a thyroid hyperfunction or a dysfunction in all these patients, the thyroid in all patients is not equally susceptible to enlargement. In other words, any organ (not necessarily the thyroid) may be in a state of dysfunction or hyperfunction without apparent enlargement, at least for a while, or the organ may never enlarge. Although a number of patients are said to possess a normal thyroid, this is rarely the case. Though normal on inspection, the thyroids of these patients are always definitely enlarged on palpation. Auscultation over the organ reveals the characteristic bruit which is pathognomonic of Graves' disease. Not only are the apparently normal thyroids really swollen on palpation, but they usually become considerably swollen late in the disease.

Not only is the proper diagnosis of Graves' disease laudable for its own sake, but what is more important, for the patient's sake, in the interests of appropriate treatment. So far as the patient is concerned, he cares not a whit for the name of the affection with which he is suffering; all he is interested in is successful therapy,—a return to health and usefulness. Having established an undoubted diagnosis of Graves' disease, typical or atypical, the question of treatment arises. Shall it be surgical or nonsurgical? Surgeons do not question the right to regard all patients suffering with Graves' disease as belonging to their field of endeavor. A percentage of clinicians, however, having obtained excellent results without surgery, differ with the surgeons in their stand. The main argument of these internists is: Graves' disease is not a hyperthyroidism, it cannot be produced by the administration of thyroid extract, many patients do not possess goiter, the end results of thyroidectomy are very frequently unsatisfactory;—carefully applied nonsurgical measures yield excellent results. Why, then, surgery?

CONCLUSIONS

1. There is no line of demarkation indicating where eyes cease to be normal and exophthalmos begins; the same may be said of goiter. Hence in many patients the presence or absence of exophthalmos and of goiter is a matter of personal equation.

2. A considerable proportion of patients suffering with undoubted Graves' disease never present evident exophthalmos and goiter, or develop these signs late in the course of the affection.

3. Since exophthalmos and goiter are not essential to diagnosis, and since there is convincing clinical evidence to disprove the theory of hyperthyroidism as the cause of the disease, the terms "exophthalmic goiter" and "hyperthyroidism" lead to error and misconception in diagnosis and treatment, and should not be employed as synonyms of Graves' disease.

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INTERPRETATION AND DIAGNOSIS OF GROSS LESIONS WITHIN THE LUNGS*

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The frequency of mistaken interpretation of physical findings, especially with reference to pulmonary disease, has been greatly impressed upon me during the past three years, during which time I had the opportunity to examine and study more than two thousand cases of pulmonary disease in returned soldiers.

Especially has the diagnosis of tuberculosis in those gassed been often due to misinterpretation and as a result a definite tuberculosis phobia has arisen along with perhaps only slight physical disability,—non-tuberculous.

As a result of the condemning tuberculous stigma affecting these deserving boys, I have been led to offer some suggestions of interpretation, ever mindful of the great fact that it is constant study of the individual case that ultimately leads one to the correct diagnosis.

Glover, of England, has found that sixty per cent of his sanitorium cases—sent in by first-class physicians—were not tuberculous. In America we find about 20 per cent of the sanatorium cases are non-tuberculous. Our experience in the army was that about 60 per cent of the cases were wrongly diagnosed, usually by careful men. We cannot trust entirely to physical signs in the diagnosis of tuberculosis. It is a careful summing up by the clinician of the clin-

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ical and laboratory findings, and a careful analysis of the history of the patient which will lead us to a correct diagnosis.

I wish to emphasize the necessity of taking time in differential diagnosis. It is easy to tell patients that we must have time to determine the exact nature of their troubles, but it is very difficult for the younger practitioner not to be forced very often by the family to make the diagnosis between two or more conditions "right off the bat."

We know that the proper study of the complicated case of tuberculosis requires time, even weeks or months, and we must have the courage to tell the patient or family so. We have all had difficulty with some of these cases, especially the thin, undernourished girl with bad color, slight temperature, some exhaustion, fast pulse and no physical symptoms. We like to call them pre-tuberculous, but they are not always pre-tuberculous or even hyperthyroid. They absolutely refuse to gain weight, give no positive signs, do not react to tuberculin, yet the suspicion of tuberculosis is strong, and they sometimes escape our ability to find the underlying cause.

Measles, scarlet fever, diphtheria, influenza and various other acute infections prostrate many of those with latent tuberculosis, also are the direct cause of pneumonia and the complications following, such as lung abcess, bronchiectasis, emphysema, empyema, etc. It is an old and repeated observation that tuberculosis is a frequent sequel to measles, and we should be ever alert for early symptoms of tuberculosis, especially during adolenscence, for I am of the belief that 80 per cent of those having measles between the ages of 12 and 20 will become actively tuberculous.

The study of pulmonary disease furnishes one of the most interesting fields for the specialist in pulmonary tuberculosis, and also affords a background of knowledge of other chest diseases and of general internal medicine, which is much needed for skillful diagnosis and to satisfy ourselves and our patients.

There are two main groups into which pulmonary conditions may be divided:

1. Where we have a history and symptoms of tuberculosis, but the local lesion is slight and difficult to find, therefore a problem in physical diagnosis.

2. Where there are very definite physical signs, therefore a problem of interpretation.

I am now going to consider only those with definite physical signs and attempt to clarify the differentiating phases.

Tuberculous Infection. In tuberculous infection we must keep in mind that we do not have constant symptoms present, but that we have attacks with slight deviations from the normal as revealed by careful physical examinations of the lungs, and that these slight deviations are permanently recognizable by careful clinical methods. Also that physical signs of such lesions may or may not have any clinical significance. Their correct interpretation is only possible in the light of corroborative evidence from the subjective and constitutional symptoms.

Given signs such as slight impairment of resonance, slight alteration in breath sounds or fine crackling rales, without stickiness or moisture at an apex, the presumption of an inactive lesion with fibrosis is justified unless constitutional evidence of active disease is present. The determination requires time, care, and repeated observations of the usual clinical phenomena such as temperature, rapid pulse, fatigue, digestion, nutrition, etc., before the diagnosis of active clinical tuberculosis, demanding treatment, is justified.

Conditions with Marked Physical Signs. The problems in this group are in the main more difficult than the preceding; mistakes are consequently less reprehensible, even if more frequent. In doubtful cases the practitioner would do well to ask early advice from those who have an opportunity to study pulmonary disease on an extensive scale. The mistake here is usually that of making a positive diagnosis of tuberculosis which does not exist.

In general the physical signs are marked, often extensive and accompanied by much expectoration. In all such cases persistent negative sputum tests for tubercle bacilli should arouse the suspicion that we have a non-tuberculous lesion. Extensive pulmonary tuberculosis with persistently negative sputum is rare.

The x-ray is of utmost value in this group, giving information unobtainable by physical examination and often establishing a certain diagnosis. X-ray should never be neglected in these cases.

Emphysema and Chronic Bronchitis. The

diagnosis is not always easy and care will eliminate mistakes of confusing these conditions with pulmonary tuberculosis.

The history of chronic cough, usually with profuse expectoration, shows a distinct tendency to exacerbation during winter months. Asthma is frequent and the chronic dyspnea is disassociated with physical signs of emphysema. The sputum, though profuse, is negative for tubercle bacilli, and the moist rales in the chest are bilateral, widely distributed, with tendency to predominate at the bases and vary greatly in number and location from day to day.

Tuberculosis is often associated with, and develops in such cases. Generally it is the chronic fibroid form confined to the apices and may not be of clinical significance, especially when tubercle bacilli are not found. This condition is most commonly found in older people. Again, some forms of chronic tuberculosis gradually develop an associated emphysema, which may be accompanied by bronchitis and asthma. When seen, the underlying tuberculosis may be masked by the other conditions and overlooked. Although presenting few, if any, symptoms of active tuberculosis, such cases usually have large numbers of tubercle bacilli in the sputum and unrecognized form a class more dangerous to their associates than serious to themselves. The largest number of tuberculosis carriers belong to this group, and in most of the cases of active tuberculosis the source of their infection may be traced to this class. Only systematic, thorough examination of all such patients—with tuberculosis always in mind as a possibility—will eliminate this error, and careful sputum examinations, also the x-ray, are the most important aids in their diagnosis.

Subacute or Chronic Bronchopneumonia or Peribronchitis. This is an interesting group—very common—especially since the increased prevalence of influenza; also to this group belong the majority of the army gas victims, and it is often mistaken for tuberculosis. The infecting micro-organism may be the pneumo-coccus, influenza bacillus or streptococcus.

The constitutional symptoms are mild and the fever of only a few days duration, with occasional recurrences. Cough and expectoration are marked, and there may be hemoptysis.

When the infection is due to influenza, catarrhal symptoms of the upper air passages are usually present and the accessory nasal sinuses are frequently involved.

The physical signs are the same as those of tuberculous infiltration, but are almost always in the lower lobes and are extensive, often involving an entire lobe. The sputum examinations fail to reveal tubercle bacilli, but one or more of the three above-mentioned micro-organisms are found in large numbers and often in pure culture.

The x-ray shows either nothing abnormal or simply an intensification of the normal bronchial shadows linearly distributed and never the fluffy irregular distribution of parenchymal tuberculous disease.

The condition may entirely clear up in a few weeks or it may only partially do so, to be followed by recrudescence in the following weeks or months. Or it may persist and develop into a chronic condition with fibrosis, occasionally resulting in bronchiectasis.

The persistence of the cough and expectoration and the physical signs invite the erroneous diagnosis of tuberculosis. In the cases in which hemoptysis occurs, this mistake is almost invariably made.

The differential diagnosis from tuberculosis rests upon the localization of the lesion in the lower lobes, the absence of constitutional symptoms in the presence of extensive physical signs, the absence of tubercle bacilli in the sputum and the presence of the micro-organisms of acute respiratory infection, the character of the x-ray picture and the disappearance of signs and symptoms in the majority of instances far more quickly than would be possible in tuberculous lesions of similar extent.

Bronchiectasis. The history of bronchiectasis is one of chronic cough, often paroxysmal in character, usually dating from an attack of pneumonia or so-called grippe. This cough is punctuated by the periodic expectoration in large quantities of purulent and often four-smelling sputum. Such gushes of expectoration are frequently precipitated by certain positions of the body, sudden exertion, laughing, eating, or often without apparent cause, and render the patient a most unpleasant companion and disgusting even to himself. His general condition is poor, he loses weight, tires easily, is short of breath, becomes cyanotic, has clubbed fingers and before long is unable to work, and, sensitively avoiding the society of others, he is altogether a very miserable

object. Periodically, especially in winter, he is ill in bed with fever and aggravation of his other symptoms, and occasionally there is spitting of blood. This condition goes on for many years, is slowly but persistently progressive and finally the paitent succumbs to inanition, pneumonia, large hemorrhage, or some associated complication.

The signs in the chest are variable and often very indefinite, depending largely upon the type of disease of which there are mainly three: the infiltrative, the fusiform or cylindrical, and the sacculated bronchiectasis. The lesions may be single, but are very frequently multiple and bilateral. They are almost always situated in the lower lobes, but may be found in the upper. In this situation they may be associated with or dependent upon a tuberculous lesion. If the bronchiectasis is single, the localization of physical signs over the lower lobe behind, presenting evidence of pleuritic adhesions, consolidation, localized bronchial catarrh, or more rarely a definite cavity, makes—with the history and the persistent absence of tubercle bacilli in the sputum—a fairly definite clinical picture which is usually satisfactorily completed by the x-ray.

With mulitple and bi-lateral lesions, especially in the earlier stages, represented by the infiltrative type, the difficulties of differentiation are much greater and the physical signs are usually those of a chronic bronchitis with or without pulmonary emphysema. During the exacerbations with fever, which are often really attacks of bronchopneumonia, there may be a polymorphonuclear leucocytosis. Again—in these types—the history, the negative sputum and the x-ray must determine the diagnosis.

Pneumonoconiosis, Foreign Bodies, Syphilis, Mediastinal Enlargements and Malignant Growths. These are other conditions producing chronic clinical and physical symptoms. The patient's history, together with the clinical evidence of x-ray and laboratory, augmented by the physical signs, will differentiate these conditions from pulmonary tuberculosis.

In conclusion I wish to emphasize the fact that all methods of more or less scientific precision—such as the tuberculin test, sputum examination, x-ray and compliment fixation reactions—indispensable as they are—all too frequently fail or confuse the diagnostician; and that in the last analysis the diagnosis of pulmonary tuberculosis, as indeed most other internal diseases, depends upon the development of that clinical sense on the part of the physician, the pursuit of which constitutes much of the fascination in the practice of medicine; and further, that justice to the patient and the profession demands that those who see a good deal of pulmonary disease should constantly keep in mind the not unlikely possibility that a thorough general examination may explain quite otherwise the suspicious symptoms which are apt to be ascribed to the lungs; and that certain definite physical signs in the chest may be susceptible to quite other interpretation than the temptingly obvious one of tuberculosis.

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DISCUSSION

Wilson Ruffin Abbott, Surgeon (Reserve), Fort Bayard, New Mexico:

I had an opportunity of running over this paper about fifteen minutes before I came here. We have at Fort Bayard, where I have charge of the medical service, some hundred cases of tuberculosis, but we have a great number coming in that confuse us and it takes quite a long time before we can decide on the diagnosis. This often extends into several months. In confirmation of what Dr. Hayes has said, we look upon all of those cases which have involvement of the lower lung, with a comparatively clear upper lobe, in which the sputum is free from bacilli, as non-tuberculous. Every once in a while, however, we trip up. A patient may run a negative sputum for months, with rales persisting in the case and we are inclined to dismiss them as non-tuberculous, and then suddenly the sputum will become positive. When this occurs, we call for ten negative certified sputums, all taken under the observation of a nurse or a doctor, but every once in a while we have to conclude that the case is positively tuberculous.

A thought which I believe is worthy our consideration as medical men—you know Miller in his work on the histo-anatomy of the lung has located the glands lying in the "Y" formation of bronchi artery and vein. In these fellows with persistent cough, why might not the positive sputum from time to time be due to the trauma of cough rupturing these glands and the discharging of their contents into the bronchi making the sputum positive? Surely although he may have a positive sputum at times he is not suffering from clinical tuberculosis because they do not have the clinical history or physical findings of tuberculous lesions. These men do not run temperatures except at brief intervals and have no acceleration of pulse.

This brings me to another point which I am

coming more and more to believe in, and that is these attacks of tuberculosis that extend over very brief periods of time, six weeks or two months perhaps, in which the sputum is positive. The man comes down with a cold and is treated for a cold and if it does not clear up within six weeks or so it is thought to be tuberculosis. I believe these cases are acute bronchitis and the positive sputum, due to the trauma of coughing. What must be the force in the lung? Fourteen pounds air pressure to the square inch. Now let us see what actually occurs in coughing. There is the retraction of the diaphragm, the closing of the glottis—then the ascent of the diaphragm, forcing open the glottis with explosive violence. What must be the injury to the tubercle laden gland?

We have a comparatively large number of bronchiectatic cases. We are treating them with pneumothorax, where we can, and the results seem to be well worth continuing the effort. I would say that we do not consider adhesions contraindication to pneumothorax. Our routine is to fluroscope these cases every week and it is astonishing to see how the adherent bands gradually thin out and snap without any discomfort or ill effect. I have just returned from a meeting of the National Tuberculosis Association at Washington, D. C. One speaker stated that he thought pneumothorax was contraindicated in bronchiectasis because the lung would reexpand and the trouble would return, but I have never seen a man relieved for a few months who was not grateful for it and if we can accomplish that relief I cannot see why it is not a splendid remedy and one we should use. I would advise you to try this method in cases of bronchiectasis, especially those with the fetid offensive sputum.

Dr. Clarence Wheaton, Chicago: I am very glad to have heard the paper of Dr. Hayes and think it is very timely. I am sure you all realize the difficulties one encounters in diagnosing pulmonary tuberculosis in the early stages. The fact that it must be differentiated from so many other things involving the lung complicates matters and the care depends absolutely upon accurate diagnosis.

Dr. Hayes spoke of the 60 per cent wrongly, diagnosed cases in the Army. Those are staggering statistics but I believe they are correct, but this was remedied as soon as we were able to establish clearing stations for tuberculosis and these men were held until the cases were properly diagnosed, and this method of studying these conditions worked out admirably.

I wish to emphasize the value of the x-ray as an adjunct to diagnosis in pulmonary tuberculosis. I think it should be used in any condition involving the chest. As a routine measure the chest should be rayed. In tuberculosis it should not be used as a matter of diagnosis but as an adjunct, and you must check your findings clinically. The clinical symptoms must be studied. The x-ray will reveal pathologically, the extent of the lesions and the fact that the patient has tuberculosis you must determine clinically. I am frank to say that many symptoms occur early which the x-ray will fail to reveal, but I think as a routine measure the chest should be rayed. Foreign bodies when lodged in the lung will produce pathology simulating tuberculosis and a humiliating situation to the physician can be avoided by taking this precaution. Influenzal infections are very puzzling and many of them simulate tuberculosis, but as the pathology clears up you will find the upper lung fields are comparatively clear and the lower lobes the last to show pathology. Pathology involving the lower lung is not, as a rule, tuberculosis. I have, however, seen one case of tuberculosis involving the left lower lobe. The case was so interesting and so actively and manifestly tuberculosis, that a plate was made and sent to the Surgeon General as a curiosity and interesting pathological condition.

Dr. Max Biesenthal, Chicago: Dr. Hayes has brought out several interesting things in reference especially to groups of moderately advanced and far advanced cases, but there are two things that were not brought out. First, the fact that an individual has tuberculosis of the lung does not rule out the possibility that he may have something else at the same time. I saw a man within the last six months who came in with an unquestionable lung abscess following tonsillectomy. He was treated for lung abscess and made what appeared to be a good recovery, and about the time we thought he was well we found tubercle bacilli in the sputum. The lung had broken down as the result of the infection and he had developed tuberculosis on top of this. The fact that patients have tuberculosis does not exclude a concomitant syphilis. Very often in the Cook County Hospital, especially in the colored, we find syphilis of the lung with pulmonary tuberculosis. I have seen several other curious conditions not associated with tuberculosis but with tuberculosis elsewhere. I have seen many cases with a marked, unquestionable tuberculosis and other lesions that could simulate tuberculosis at the same time.

With the x-ray all of us who do work on the chest believe we should go the limit in these cases. Ray the cases by all means but I believe we have gone away beyond what is done here in Chicago. A patient comes in and says, "I have tuberculosis. If you don't believe me, here is my x-ray plate." I saw such a case yesterday and it will be difficult to convince that man from the standpoint of clinical medicine he is free from tuberculosis. Just because you see a few lines radiating out from the hilus it does not mean that the patient needs treatment, or that he need be considered a case of active pulmonary tuberculosis. Here in town the diagnosis is made not from the history or from the question of clinical findings, but simply from a few, indefinite findings on an x-ray plate. I do not believe we have any more right to condemn a man to tuberculosis from an x-ray examination alone than from any other examination alone. We

must consider everything. The history, the physical findings, and the x-ray findings. The gross lesions of tuberculosis can be and are simulated by almost every other disease, and we must remember that tuberculosis is an upper lobe disease and rarely affects the lower lobe.

Dr. A. Wilberforce Williams, Chicago: I have listened with much interest to the paper by my friend, Dr. Hayes, and I wish to say that many points mentioned by him have given me a great deal of difficulty in finding out the trouble in the lungs. During the war, in the Government service, I examined many cases and I agree with Dr. Hayes and Dr. Wheaton, that tuberculosis is largely an upper lobe disease, except that in conditions following some other disease, such as pneumonia or pleurisy, I have sometimes found the lower lobe early affected.

In discussing scientific questions, we must lay aside our reference to race and address ourselves to the scientific aspect of the question, etc., but before the war, we thought the colored people had a monopoly of syphilis, gonorrhea, tuberculosis and other diseases. The Government sent me to France and I found out that syphilis of the lungs is just as common among other races as in the colored. I have been acquainted with that race for forty years, and have examined ten thousand chest cases—and in those, have found only two cases that were definitely diagnosed syphilis of the lungs. It is a very rare thing, and I do not wish this audience to go away thinking that syphilis of the lung in colored people is a common condition, but that it is just as rare in the colored race as in other people. In the hospitals of France where I saw and examined many chests as well as here in America, I found it to be a very hard thing to do—yes, very difficult to diagnose syphilis, not only in colored people, but in those of the Caucasian as well.

Dr. Robert H. Hayes, Chicago (closing): I just want to try to drive home the salient features for interpreting these conditions. The clinical symptoms plus a careful and definite study of temperature, better make temperature readings every two hours for at least a week. I think these are the two main features for determination. The laboratory findings and the x-ray are only adjuncts. A positive sputum is positive. A negative sputum does not always mean much. When the boys started coming home we sent them to the hospital for observation, and if they did not run a temperature they were sent back home. Frequently coming over the mountains they would have a definite hemorrhage and would have to be sent back to sanitoria.

I was glad to have Dr. Abbott make a few remarks for he is handling many of these cases. Dr. Wheaton's work is well known and had been marvelous, and I was also glad to have Dr. Biesenthal and Dr. Williams discuss the paper.

WHERE THE FIELD OF THE OCULIST MEETS THAT OF THE PRACTITIONER*

B. Y. Alvis, M. D.,
ST. LOUIS, MO.

It is not the purpose of this paper to offer any new contribution to the science of ophthalmology. Nor is it intended to discuss in detail any portion of a subject that, for the most part, you are only occasionally called to consider.

Although such occasions may be comparatively rare, there are times when one doing general practice is consulted about some eye condition. Now and then will come one where the wrong treatment given or the needed treatment delayed may have unfortunate results. Practitioners are so nearly unanimous in protesting ignorance of the most elementary facts of opthalmology, that I feel it is not presuming too much to discuss here some of the things that I have observed must often be treated first by the family doctor.

It is not proposed here to go into a comprehensive treatise on these subjects but rather to review with you some of these conditions and recall the signs by which *you* can recognize them, some of the consequences of improper treatment or delay, and in some instances to suggest in a general way the course to be pursued. The purpose is rather to make you feel that *you can* know something about these conditions and direct your attention to a few that are most likely to require your attention rather than to try to give you all the details in any type of cases.

There is perhaps no condition that brings more patients from the general practitioner to the oculist than headache, and eye strain to be sure is often an unsuspected source of headache.

If the headache comes on after use of the eyes, i. e., after the patient is up a while,—gets worse as the day goes on or on doing close work,—is better after going to bed, one should at once suspect eyestrain as the cause. The patient's vision may be perfect and no discomfort may be noted in the eyes themselves, although as a rule, eye discomfort accompanies all headaches. The headache may be frontal, occipital or across the vertex. It is usually bilateral.

A headache that is present on rising and gets better after the patient is up a while is rarely

*Read at 48th Annual Meeting, Southern Illinois Medical Association, Cairo, Ill., Nov. 2, 1922.

due to the eyes. Eye-headaches are practically always relieved by sleep.

Headaches of the migraine type may be induced by eye strain and made less frequent by its relief but they are rarely cured by this means.

In cases of persistent headache one should never overlook the possibility of intracranial new growth nor forget that the eye examination furnishes a most important part of the evidence for the diagnosis.

The following case is an example:

A girl, aged 13, was brought in suffering from headaches and dizziness, associated with vomiting. Recently, she had been seeing double and this symptom caused her to be sent to the oculist. Upon examination it was found that she had choked discs, weakness of abduction to the left, and the left blind spot was enlarged. Upon this basis she was referred to a neurologist, who confirmed our tentative diagnosis of brain tumor. At operation the tumor was removed and the girl is now apparently well. Such cases are not so rare as one may think and it is generally the family doctor who is first consulted.

Among other causes of headache *acute glaucoma* is to be considered. Some time ago a patient was being treated for a severe neuralgia with terrific pains over and behind one eye. There was nausea and vomiting. The eye on this side was somewhat swollen, but there was such photophobia that the patient kept it closed. The pain however, was rather behind and above the eye and the physician in charge—who by the way is a leading practitioner of St. Louis and a very keen observer—had considered the ocular manifestation as secondary to the "neuralgia." When the pain was relieved somewhat after a few days and the patient could open her eye, she found she could not see and consultation was asked. Upon examination there was found marked redness of the globe, the cornea cloudy, the pupil large and fixed and the sight practically gone. The globe was so tender that a touch even with a feather caused the patient to wince. The ball of the eye was hard to the palpating finger. Here was a typical picture of acute or inflammatory glaucoma. Her doctor would have known at once that the eye was affected had he but looked at it. There are several conditions where there is unilateral pain in the head, and in the eye and back of it. Opthalmic migrane, neuralgia of the face, frontal or ethmoidal sinusitis, besides some other eye conditions as panophthalmitis and iritis may present a similar picture, so one may, as in this case, simply overlook the glaucoma by not suspecting it.

The differentiation is readily made by the large fixed pupil, the cloudy cornea, the poor vision and the hardness of the globe. Each of the other conditions also has its own characteristic signs.

Just a few months ago a man, aged 50, came to a physician with a foreign body on the cornea which had been there several days and had caused considerable inflammation. The foreign body was removed and because of the considerable pain and circumcorneal redness a drop of atropin was instilled. Early next morning the patient was seen at his house suffering terrible pain in and behind this eye. Here was no question that the eye was the seat of the trouble. There were, however, two horns to the dilemma. The history of injury and delay in treatment suggested an inflammation, perhaps an iritis, as that would have given severe pain, aching, and redness. If an iritis, the treatment would be atropin to dilate the pupil, if glaucoma, atropin would make it much worse. Examination of the eye showed a large fixed pupil, a cloudy cornea, and swollen orbital tissues. The globe was much harder than the other eye but so tender that palpation was difficult. Here the differentiation depended almost entirely on the increased hardness of the globe as the large pupil could have been due to the atropin previously instilled and the cloudy cornea might have been seen in an inflammatory condition. Such a mistake in diagnosis and continued use of atropin would indeed have been a grievous error and would probably have cost the patient his eye sight in a very few days. The use of 1 per cent eserine solution every few hours and applications of hot towels gave relief of the pain and eventually the vision was recovered.

Chronic glaucoma is not nearly so striking and is not so often treated or seen by the general practitioner. I recall a case, however, of a lady who came to the Washington University Dispensary last winter. Her vision had been failing for about two years and she had tried glasses without help. Her doctor had observed the grayness of her pupils and had told her that she had cataracts which would have to be ripe before they could be operated on and that she would have to wait till she was blind, so she had waited and now came to have her cataracts removed. A glance at her eyes showed the large fixed pupils, and

slightly hazy cornea of glaucoma, the lenses indeed were partly cataractous, but with the ophthalmoscope could be seen the gray atrophic cupped nerve heads of an eye whose blindness no operation could relieve. The few months of grace had slipped away and we scarcely needed the added evidence of measuring the increased tension to know that here was another victim of chronic simple glaucoma.

This disease alone would be reason enough for barring the fitting of glasses by optometrists. Practically every oculist has each year one or more cases similar to the following:

Mrs. W. had always bought her glasses at a certain optical shop where they were fitted *free by a licensed "doctor of optometry."* She was getting old, however, and could no longer see so well. She noticed that there was a halo about the lights and that she stumbled over articles about the house, so she had her glasses changed. This change was not satisfactory, so she changed opticians and another optometrist sold her another pair of glasses. These also helped but little, and a third "specialist" was seen. He found that she could see practically nothing with one eye and very little with the other and advised her to seek the advice of an oculist as she probably had cataracts. Unfortunately she did not have cataracts. The wide fixed pupils, the slightly clouded cornea and the eyes fixed straight ahead suggested what the measure of the tension confirmed—chronic simple glaucoma, neglected; the sight hopelessly lost.

Acute iritis not infrequently causes a patient to seek his family doctor for a "sore eye." The doctor perhaps feels that this is not an ordinary case, but not being sure gives it expectant treatment a while before sending it to an oculist. In this short while considerable damage may be done.

Just a few weeks ago a young man came into the office, sent by a very competent practitioner, having a large practice in a nearby town, who usually refers his eye cases. He had seen this boy four or five days before and given him some drops but on a second visit the unusual pain, which was sufficient to keep the patient from sleep caused him to advise consultation. Upon examination, it was found that the redness was most intense next the cornea; the pupil of the affected eye was *smaller* and slightly irregular in shape, the tension was normal but the eye somewhat tender to touch. Here were the typical signs of iritis. Atropin was instilled but it was found that the iris was already attached to the lens as it does very early in this affection. In this case continued application of atropin and hot towels succeeded in loosening the synechiae but some permanent opacities remained on the lens.

It was mentioned above that frontal or ethmoidal sinusitis may present these unilateral headaches with redness of the eye and swelling of orbital tissues. Some of you have doubtless seen cases similar to this one of a young woman who came into the clinic this summer. Her right eye had been swollen and very painful for a few days and the physician consulted had advised her to come to the eye clinic. Here it was found that although the lids and orbital tissues were so swollen, that there was marked proptosis, the eye itself was normal as to vision, condition of the cornea, pupillary reaction, etc. The optic nerve was slightly hyperemic. There was distinct tenderness of the supra orbital ridge. An examination of the nose revealed pus coming from the sinuses and the patient was removed to the hospital. The sinuses were drained both intra nasally and by external opening but the process was too extensive and developed into meningitis with fatal termination.

Perhaps the thing that most often calls the family doctor into the field of oculist is the eye injury and in no circumstance is there greater need for good judgment. In spite of the fact that most such injuries are trivial and lead to no permanent disability nevertheless they are usually considered with concern by the patient and his family. This almost universal fear of eye injuries is without question based upon the generally known fact that many such apparently slight injuries end disastrously. The patient and his family may feel very confident no serious damage is done, but they feel incompetent to judge, so see the doctor for assurance. And their fears should not be too lightly allayed.

The case of Mr. W. J., farmer, aged 65, is typical. This man was setting an axe on its handle and struck it with a hammer. A chip flew off, striking his closed lid and causing it to bleed. He was confident there was no serious injury to the eye in spite of the fact that he could not see, because it had been closed. However, he went to his doctor who gave him some drops and told him to wait a few days. The eye became very painful, and on his second visit he was told to see an oculist. Several days had now elapsed and the eye was much inflamed. The pupil was filled with exudate and nothing could be seen of the interior of the eye. An x-ray showed a large fragment of steel in the eye-ball. This was removed by the giant mag-

net, but very little benefit was expected beyond saving the globe.

Every advantage lies with the case that is seen early. A young man working in a local garage was struck in the eye by a chip from his hammer. The doctor who saw him first brought him at once to the office and at this time the findings were most interesting. There was a tiny wound in the cornea at the site of entrance. A drop of blood in the anterior chamber from a wound scarcely visible in the iris. The vision was only slightly impaired. On ophthalmoscopic examination a hemorrhage in the retina showed the further path of the missile. X-ray localization proved the steel still within the eye and it was removed by operation the same day by means of a magnet. The patient was to remain in the hospital a few days but on the second day he left to make a trip into the country and was not heard of again for several months when he reported that the eye was as good as ever.

In these cases the first but not infallible guide is the vision. If normal there probably is no serious injury, but one must not be too sure.

Eyes that have been struck by a blunt object as a ball or a fist may be brought for opinion. If the vision is normal and the pupil active and equal to its fellow there is usually little to be feared even if the ecchymosis and swellings are extensive. One cannot be absolutely sure without ophthalmoscopic examination of the fundus but one may be reasonably assured.

Foreign bodies on the cornea are often overlooked. If a patient says he has something in his eye do not be sure he hasn't till a most careful examination with focal light has been made. A friend of mine who teaches in an Illinois High School was struck in the left eye by a quantity of hot ashes one morning. He suffered severe pain and the eyes were very red. A local physician removed a cinder or two and the eye partially recovered shortly, but remained very sensitive and in spite of repeated treatment by the doctor he was almost entirely unable to study at night. When seen several weeks after the accident a tiny foreign body practically buried in the cornea was found and removed and the symptoms soon subsided.

After finding the offending particle use first a small piece of cotton wrapped tightly on a small applicator to remove it. If it cannot be brushed off then take a fine pointed instrument and remove the foreign body with as little else as possible. Only a few weeks ago a factory worker was sent to the office with a note by the attending physician asking that a piece of steel be removed from his eye. The man said the doctor had tried to get it out with a tooth pick. The tiny sliver of steel was still there but most of the corneal epithelium was not. A sharp pointed instrument would have gotten the steel and only a little epithelium.

After removing foreign bodies a small abrasion of the cornea usually remains and when an abrasion exists a dressing should keep the eye closed till it is healed. In such cases the use of a solution of fluorescin, 2 per cent, or mercurochrome, 1 per cent, is most useful in showing whether the epithelium has covered the wound.

After severe irritation of the eyes as by smoke, or by ether during anesthesia the first requirement is to relieve the pain. Only a little while ago I was called late one evening to see a young woman who had a breast amputation 35 hours previously. Ever since recovering consciousness she had suffered torture in her right eye. In fact the eye was so painful that she didn't notice any discomfort in the breast.

An ice bag had been applied to the eye without relief. Holocain 1 per cent was ordered as often as needed, i. e., every 15 to 30 minutes, and pledgets of cotton changed every minute, from a bowl of cracked ice to the eye. This treatment had to be kept up almost continuously for about 3 days. The reason the ice bag did not give relief was the fact that the towel around the bag would get warm next the eye and form a hot dressing in spite of the ice in the bag.

There was also in this case a large abrasion of the cornea not apparent until stained by fluorescin. The corneal epithelium can very easily be removed during the struggles of induction.

First aid in the case of lime or acid burn of the eye is most important and proper instruction by telephone may save the eye. The first thing to do is to get the offending substance out of the eye and best means is to flush with plenty of water. A very good way is simply to hold the eye under the faucet and let the water run through. Of course, if an acid burn, and soda is

at hand and can be applied at once, very well, but don't wait—wash it out.

A word now concerning the use of the ophthalmoscope. The electric or self luminous instrument is so easy to use that no one need feel it too difficult. A very moderate amount of practice will render one capable of observing the disc and judging whether there is blurring or swelling of the nerve head; or one can see many of the changes that accompany constitutional diseases as diabetes and nephritis.

The pupils are certainly worthy a moment's consideration. Every patient, especially every one at middle age and above, deserves a careful observation of his pupils as to size, shape, equality and reaction to light and accommodation. This is indeed an oft repeated statement but nevertheless the Argyll Robertson pupil is too often first observed by the oculist.

Another reaction, not so well known as it deserves to be, was first described some years ago by Drs. Wolfner and Wiener. It is a reaction seen in cases of arterio-sclerosis with hypertension. The pupil is large, reacts promptly to light, but at once rebounds to its former size or nearly so. The sign may hardly be considered pathognomic of hypertension, but it is certainly suggestive and hypertension is found in most cases exhibiting it.

Throughout this discussion I have cited a few typical cases and touched only on those conditions that I have actually observed to come first to the general practitioner. In conclusion, let me repeat, that in presenting this incomplete discussion of so many rather unrelated subjects, it is my purpose to combat the feeling harbored by so many physicians that eye conditions are in a class with Einstein's theory, hence not to be considered by them; also to show you that many eye diseases you not only can know in their essentials, but the patient has a right to expect you to know them well enough at least to be able to judge whether they are serious or not; whether they require immediate attention or can wait; and finally whether it is necessary to consult an oculist or whether the matter will clear up in a short while under your own observation. This latter idea may cost the oculist some practice. It is nevertheless a service the patient has a right to expect from his tried friend, the family doctor.

Carleton Building.

SALIENT POINTS IN THE DIAGNOSIS AND TREATMENT OF CANCER OF THE UTERUS*

ARTHUR H. CURTIS, M. D.
CHICAGO

With the passage of time, I have been increasingly impressed by the frequency with which excellent clinicians fail to diagnose cancer of the uterus. On this account I feel less hesitant in talking to you about well-recognized cardinal features of diagnosis and treatment.

Probably the most useful of all rules relative to the diagnosis of cancer is this: Uterine bleeding, in any woman definitely beyond the menopause, whether it be spontaneous hemorrhage or after intercourse, must be considered positive evidence of cancer—until thorough examination eliminates such a possibility.

The outstanding features of the most common type of uterine cancer, that of the vaginal portion of the cervix, seem not sufficiently emphasized. Palpation is by all odds more valuable than speculum examination. The cervix may be slightly enlarged, even up to one and one-half or two times normal size. But the supreme test is friability and hemorrhage of the tissues when palpated by the examining finger. This evidence is so pathognomonic and so usual that the microscope is not often necessary in establishing a diagnosis of carcinoma of the external cervix.

Cancer concealed within the cervical canal or located higher in the uterine cavity is often overlooked. In the absence of palpable disease upon digital examination, bleeding which occurs after the menopause is an absolute indication for curettage. We dislike to insist upon diagnostic curettage if the bleeding is slight and the patient feels perfectly well, or if she be a timid elderly woman. But it is imperatively necessary, and usually a carcinoma will be found; practically the only exception is a uterine polyp.

Finally, I would emphasize the increasing incidence of cancer in younger women. We have recently encountered a few in patients of less than thirty years, and several in women less than forty years old. Malignancy in these younger patients seems less easy to diagnose; firstly, because bleeding may arise from many other causes, and secondly, because there seems less tendency

*From the Gynecological Service of St. Luke's Hospital. Read before the Chicago Medical Society, Nov. 15, 1922.

to friability of the new growth. A generous proportion of the previously mentioned unusual cases, in which the microscope is required to establish the diagnosis, occur in young women.

Treatment. Inoperable cancer, irrespective of its location, is best controlled by radiotherapy.

Operative treatment of less advanced cancer of the body of the uterus yields good results and continues to be given preference over radium.

It will, I believe, be many years before we decide whether radium or operation is preferable in so-called "operable" carcinoma of the cervix. When visiting Dr. Graves' clinic he asked three of us what we would do in a certain fairly early case: one said "operate," one "radium and operate," the third "radium." That summarizes the present attitude, except that there is a gradual tendency toward more use of radium. For the present at least, I have almost entirely discontinued operation, in favor of radiotherapy in the treatment of cervical cancer.

In closing, I would mention one point in the use of radium. We employ capsules and needles. The capsules are placed in the cervical canal. The needles are buried in the cervical tissue. Formerly, I buried the needles directly into the cancerous mass; now I make a palisade outside of the growth. That part of the cancer near the cervical canal is amenable to control, but more lateral extension—toward the bladder, the broad ligaments and the rectum—are most dangerous. Placing the needles outside of the periphery of the growth and in the bases of the broad ligaments therefor proves most satisfactory in checking local metastases and yields the best ultimate results.

104 S. Michigan Avenue.

THE FAMILY DOCTOR

I've tried the high-toned specialists who doctor folks today,
I've heard the throat man whisper low: "Come on now let us spray."
I've sat in fancy offices and waited long my turn
And paid for 15 minutes what it took a week to earn.
But while these scientific men are kindly, one and all,
I miss the good old doctor that my mother used to call.

The old-time family doctor! Oh, I am sorry that he's gone,
He ushered us into the world and knew us every one,
He didn't have to ask a lot of questions for he knew
Our histories from birth and all the ailments we'd been through.
And though as children small we feared the medicines he'd send,
The old-time family doctor grew to be our dearest friend.

No hour too late, no night too rough for him to heed our call;
He knew exactly where to hang his coat up in the hall;
He knew exactly where to go, which room upstairs to find
The patient he'd been called to see, and saying: "Never mind,
I'll run up there myself and see what's causing all the fuss."
It seems we grew to look and lean on him as one of us.

He had a big and kindly heart, a fine and tender way,
And more than once I've wished that I could call him in today.
The specialists are clever men and busy men, I know,
And haven't time to doctor as they did long years ago.
But some day he may come again, the friend that we can call
The good old family doctor who will love us one and all.

Edgar A. Guest.

BOOK REVIEW

THE MEDICAL CLINIC OF NORTH AMERICA. January, 1923. Vol 6, No. 4. Philadelphia Number. Published Bi-Monthly. Philadelphia and London. W. B. Saunders Company. Price per Year $12.00.

The contributors to this number are Doctors McCrae, Anders, Riesman, Norris, Funk, Sailer, Miller, Pepper, Musser, Jr., Mohler, Torrey, Wolferth, Schnabel, Jackson, Lukens, Moore, Funk, Bothe, Kern, Weiss, Crawford, Leon Jonas and Harold W. Jonas.

This number is up to the usual standard of the Medical Clinics.

NURSING AND NURSING EDUCATION IN THE UNITED STATES. Report of the committee for the study of nursing education. New York. The MacMillan Company. 1923. Price, $2.00.

This work gives a survey of public health nursing; the nurse in private duty; the nurse in institution; the hospital school of nursing: the training course for the subsidiary nursing group; University school of nursing; post graduate courses.

Society Proceedings

CHICAGO MEDICAL SOCIETY

Joint Meeting of Chicago Medical and Chicago Ophthalmological Societies, March 7, 1923

Concerning Practical Co-operative Work Between Medical and Surgical Practitioners and Ophthalmologists.—G. E. DeSchweinitz, President, American Medical Assn., Philadelphia, Pa.

DISCUSSION

The Surgical Standpoint.....Dean Lewis
The Medical Standpoint.....Jos. M. Patton
The Ophthalmological Standpoint....Geo. F. Suker

Regular Meeting, March 14, 1923

1. Epidemic Encephalitis. Difficulties in the Diagnosis and the late Sequela.—Geo. W. Hall.
   Discussion—Archibald Church.
2. Appendicitis in Children.—Kellogg Speed.
   Discussion—Clifford G. Grulee and Morley D. McNeal.

Joint Meeting of Chicago Medical and Chicago Urological Societies, March 21, 1923

"A Standard for the Determination of Cure of Gonorrhea in the Male."—Frank M. Phifer.

"The Diagnosis and Treatment of Stone in the Ureter." (With lantern slides.)—Herman L. Kretschmer.

"Frequency and Dysuria in Women with Reference to Trigonitis and Stammering Bladder."—Edward W. White.

Discussion—John Nagel, Robert Herbst and Joseph B. DeLee.

Regular Meeting, March 28, 1923

The Present Status of the Treatment of Malignant Diseases of the Prostate and Bladder.—John T. Geraghty, Baltimore, Md.

Discussion—Daniel N. Eisendrath, Victor D. Lespinasse and Lewis Wine Bremerman.

THE CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY

DISCUSSION

(Continued from March issue)

Primarily in every case sinus disease is found. After cleaning out the sinuses the crust formation still persists and the only way to obviate this is to fill up the space, which is best done hy implanting tissue in the septum. They have tried the Halle method, but have found it easier to move the septum out to the lateral wall. In many instances this has given excellent results. They believed the disease was the result of a sinus condition in childhood, rather than a suppurative ethmoid.

Dr. Rohert Sonnenschein called attention to the original article of Perez, formerly of Buenos Ayres hut now amhassador to Vienna. In that article he stated that hy injecting this coccohaccilus fetidus of Perez into the superficial veins of the ears of rahhits atrophy of the turhinate would be produced. These findings were never verified hy other investigators.

The word "ozena" has always heen somewhat confusing. His understanding of the term is that it means a stench and many cases of atrophic rhinitis do not have this odor. He thought it was a mistake in nomenclature to speak of fetid and non-fetid cases, for if ozena means a stench there cannot be non-fetid cases.

Dr. H. W. Loeh thought that for ahout four thousand years everyone had been trying to find a cure for ozena hut had failed. Bosworth had stated that the cause is a purulent rhinitis, hut the picture of the mucosa in atrophic rhinitis is so different from that of hypertrophic rhinitis, and occurs so much earlier than the hypertrophy, that it seems hardly worth while to consider that in connection with the cause and effect.

Dr. Loeh thought the work done hy Dr. Horne was very advanced, hut without effect. He also helieved the vaccine treatment which was in vogue for a while had done very little good.

Dr. Alfred Rundstrom (closing) agreed with Dr. Loeb regarding the vaccine therapy.

Replying to Dr. Grove, he did not helieve that ozena is contagious. Where he had seen several cases in one family or in the same locality he had heen ahle to trace them to an epidemic of some disease which had heen responsihle for the original sinus infection.

He thanked Dr. Holinger for his valuahle remarks. After he had convinced himself of the correctness of the theory of sinus disease he had tried to find why the picture of ozena was so entirely different from the clinical picture of an ordinary sinusitus. He had proved that there was a distinct difference pathologically as well as clinically hetween the fetid and non-fetid ozena. In the cases where there is recurrent crusting, even though the sinuses are freely drained, he was convinced that the crusting was due to the caries of the hone and would not disappear until there was healing of the hone.

Replying to Dr. Pollock, he had also, hut in only one case out of a great many, found an alteration in the hony tissue, and would prefer to call this alteration a rarefying osteitis.

Dr. Rundstrom could not agree with Dr. Sonnenschein that it was a mistake to use the term non-fetid ozena, hut he had a long time ago proposed to cancel the name ozena and suhstitute for it the more logical "Sinusitis purulenta foetida et non-foetida cum rhinitis atrophica."

THE CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY

The regular meeting of the Chicago Laryngological and Otological Society was held on Monday, April 3, 1922, at the Hotel Sherman at 8:00 P. M.

The President, Dr. Robert Sonnenschein, in the chair.

Demonstration of Cases, Drugs and Instruments:

Dr. Alfred Lewy presented a 2 per cent solution of eosin and silver, concerning which chemists had reported as follows: "The solution contains no free silver and does not precipitate protein and is not precipitated by sodium chlorid solution. It is not toxic if injected intravenously and a 5 per cent solution causes only slight irritation."

Dr. Lewy stated that he had tried this preparation out, using it locally in the same manner as other silver salts, and found it was not irritatiing in a 2 per cent solution. Its great drawback was its staining properties. It must be used in the nose with caution and can be used in the throat if watched carefully. It is slightly analgesic and if used in ordinary sore throat for quite a while pain will diminish. It is apparently useful in superficial infections but does nothing in deep-seated ones. It is not necessary to precede it with cocain. Its principal value to him had been in cases of chronic otitis media where it was possible to get the solution into the tympanic cavity.

Mercurochrome gave Dr. Lewy the idea of try-

ing to get a silver salt compounded with a dye. He now has a chemist trying out copper and zinc both with eosin and other dye stains, in an effort to find one that does not stain as much as eosin. The stain can be temporarily removed with 3 per cent hydrochloric acid, but when water is put on it reappears. He thought the therapeutic value was due to the penetrating quality of the dye; the object of the dye was to carry the silver into the tissues.

Scientific Program.

Dr. Don C. Sutton (by invitation) presented a paper on "Hyperesthetic Rhinitis of Known Etiology."

AUTHOR'S ABSTRACT

This condition is probably a local manifestation of anaphylaxis to a specific foreign protein.

Dale and others have called attention to the similarity in the reaction of histamin and that of anaphylaxis: But this individual may be desensitized to a specific protein but not to histamin.

The specific anaphylactic hay fevers include the seasonal types, as pollens, trees, grass and compositae,—

Foods: Bacterial and animal emanations of all year type—

Animal emanations
Foods
Bacterial
Pollens

Pollen Hay Fever:

I. Early spring (Rose fever): due to trees as willow, poplar and maple, dandelion and occasionally other flowers.

II. Late spring and early summer: timothy, June grass and red top—daisy.

III. Late summer: ragweed, corn, golden rod, daisy, sweet clover.

In fifty-nine cases—

55 were caused by ragweed
1 dandelion
3 timothy
1 red top
3 corn
3 goldenrod

In seventy-three cases—all causes—

55 ragweed
3 corn
3 goldenrod
1 dandelion
3 timothy
1 dog hair
4 goose feathers
2 chicken feathers
2 cat hair
1 red top
1 bacteria
2 cases season hay fever unknown cause.

Treatment:

Twenty-four treated with a pollen extract prepared by the method of I. Chandler Walker:

8 completely relieved	33 per cent.
10 improved greatly	42 per cent.
18 relieved or improved	75 per cent.
6 unimproved	25 per cent.

Ten cases were treated by a suspension of the ground pollen in olive oil, giving three to four injections at five day intervals just before and during the attack:

4 completely relieved	40 per cent.
4 relieved	40 per cent.
2 unimproved	20 per cent.

Eight cases treated with intravenous peptone solution as described by Auld, B. M. J.:

5 completely relieved	60 per cent.
2 improved	25 per cent.
1 unimproved	8 per cent.

Vernal conjunctivities 3:

1 ragweed cured with pollen
2 undetermined—
1 relieved by peptone
1 unimproved by peptone.

Dr. Otto J. Stein presented a paper entitled "Intranasal Injection of Alcohol in the Treatment of Hyperesthetic Rhinitis and Some of the Nasal Neuroses."

ABSTRACT

The author stated that he had first presented this subject in 1907 before the American Academy of Ophthalmology and Otolaryngology and that he had since presented several additional papers on the subject.

For the purpose of simplifying the understanding of this method of treatment he divides the distribution of the intranasal nerve supply into two main divisions, the anterior and posterior. The anterior division is the nasal nerve, sometimes called ethmoidal, which is one of the three large branches of the ophthalmic root. The other two branches are the frontal and lachrymal.

For the purpose of injecting the anterior division of the nerve a straight steel needle of about 22 to 24 gauge and 9 cm. long with a slip joint to securely fit an all glass syringe is used. As the point of the needle is only introduced to a depth of about a millimeter, the bevel of the pointed end should not be longer than that, in order to lessen the possibility of fluid escaping. After previously preparing the field for injection by shrinking and anesthetizing with a solution of cocain and adrenalin, the straight needle is fixed to the syringe containing the alcohol in succh a manner as to show by the indicator on the slip joint that the bevel point is directed forward and is then carried to the foramen by following closely the septal wall until the vault is reached, a distance of about 5 to 5½ cm. from the nasal crest; then the point is carried slightly outward as the slit through which the nerve enters is about 1 to 2 mm. lateral to the septum. If properly placed the point of the needle can be felt entering the opening. No force is necessary. It is sufficient that the bevel of the

point is buried in the foramen so that no fluid escapes into the nostril. The neighboring nostril is injected in like manner. For injecting young children a short and finer needle should be used.

The needle used for injecting the posterior division is 10 cm. long, 16 to 18 gauge, with slip joint and indicator showing the location of the bevel at the point. The point is sharp and of short bevel and bends at about a right angle from its shaft for a distance of about 10 mm. For very wide nostrils and deeply located fossa a bend of 15 mm. is used and in like manner one of 7 mm. for closely fitting turbinal and septum. After preliminary cocainization and thorough shrinking of the tissues, as for the anterior injection, the curved end of the needle is carried to the posterior nostril, hooked gently around the tip of the middle turbinate and at a point where this body arises from the lateral wall the foramen of the sphenomaxillary fossa will be found. Introduction of the needle point into the membrane covering the foramen will reach the nerves emerging therefrom. If the point of the needle is carried three or four millimeters posterior to the first position and then forced laterally through the membrane a more accurate penetration of the ganglion is possible, and with less chance of injuring any vessels.

In injecting the posterior group of nerves the author advises introducing the curved needle point in the region of the sphenopalatine foramen, for an injection at the foramen reaches those nerves supplying that part of the nasal membrane where most of the protein substance is likely to be found, and the ganglion can be reached, in part at least, by proper placement of the needle point. When one is satisfied the needle does not accurately enter the desired place another attempt should be made in a few days. Where the improvement is only partial after anterior injection a posterior injection may be added. In cases of hay fever the relief is usually for the season. In simply hydrorrhea, spasmodic coryza and nasal reflex asthma it usually acts instantly.

Alcohol is a most suitable substance for injection because it is sterile, non-toxic and non-corrosive. Its action on nerve substance is a disorganization of its cell elements, causing some hardening but no necrosis. The funtional activity of the nerve is restored to normal within a variable period; the more exact the injections, the more effective and lasting the results. Infiltration of the membrane in the neighborhood of the foramen is far less effective but one does secure some immunity. Careful sterilization of instruments and field and slow introduction of the fluid is essential to best results. A 75 per cent dilution with fresh sterile water, about 10 minims, is used for each injection. As most of the sufferers are nervous and restless, it is best to administer morphin and atropin prior to the treatment, and tablets containing a small dose of codein and caffein at intervals of a few hours following.

DISCUSSION

Dr. J. Gordon Wilson said that the interesting papers indicated how very obscure a subject hyperesthetic rhinitis is. Dr. Sutton dealt briefly with some of the modern methods employed in the diagnosis of the numerous factors which produce the symptoms. In spite of the great amount of work done the primary cause of this susceptibility is unknown.

Hyperesthetic rhinitis looked at from the standpoint of the rhinologist may be said to arise from an instability of the nasal mucosa, understanding by instability the loss of power to react within normal limits to factors not usually present in the air and probably also in the blood. To the question to what is this instability due, no answer had as yet been given. Dr. Sutton referred ot an hereditary sensitivity. There appeared to be no doubt that some families have such an instability, but not necessarily to the same special protein.

When one asks what is actually known about hyperestbetic rhinitis one soon becomes aware of our deficiency of knowledge. We know that the absorption of vegetable and animal proteins by the nasal mucosa can produce a sensitization, both local and general. Why, then, is it not possible to desensitize by the nose? We know that in sensitized individuals the symptoms of hyperesthetic rhinitis can be produced locally by a suitable protein, and one asks if it is possible to have a nasal mucous membrane sensitized in an individual who is not generally sensitized. A number of nasal membranes which are hypersensitive to pollen are bypersensitive to other things; e. g., adrenalin; so it is possible to "desensitize" by something to which the mucosa is not sensitized; e. g., peptone.

These are a few of the questions which arise to which so far no answer can be given. But in considering the gaps in our knowledge we should also consider the progress that has been made in the last few years. Dr. Wilson has no difficulty in explaining the influence of the psychic factor mentioned by Dr. Sutton. To it one applies the principle which Pavloff has demonstrated in his experiments on hypersensitivity from cerebral factors; there is a controlling cerebral influence which may precipitate the symptoms.

Dr. Wilson's treatment is based on the belief that he is dealing with a mucous membrane which is unstable. He finds it advantageous to eliminate factors which tend to produce the symptoms, and so get at least amelioration. As a preliminary he classifies vasomotor rhinitis into two groups, one sensitive to protein reaction, the other to bacterial, this grouping being based on the history and findings in the upper respiratory tract.

Desensitization by proved factors offers the best mode of attack. He removes any cause that appears to increase this instability (polyps, sinus disease, etc.), and following this he expects to obtain some benefit. For getting at the fundamental etiology he is relying upon such work as Dr. Sutton and others in this special field are doing.

Dr. Harry Kahn said that for a year or two he had been seeing a number of cases of intumescent rhinitis with general depression and more or less discharge. These patients also showed a definite symptom which had not been referred to in this discussion; namely, diminished blood pressure. He had noticed this hypotension rhinitis in many cases, with the blood pressure around 100. One patient seen recently had a systolic pressure of 90. Most of these cases were in women and were accompanied with more or less general symptoms, pain, hay fever, hyperesthetic rhinitis and rhinorrhea. These cases had yielded to simple treatment, exercise, drinking of coffee, cold baths and abundance of food.

Dr. Edwin McGinnis, referring ot heredity in these cases, stated that he had three sets of grandparents, parents and children who were sensitive to ragweed, both small and large. He had tried Dr. Goodale's plan of desensitization, but had decided that he was not going to attempt this any more in hay fever patients, but would use the vaccines and toxins for diagnostic purposes. Before operating cases of rhinitis, simple or complicated, they always make the skin tests and in many instances determine not to do any operative work. He cited the case of a child who was sensitive to red top, timothy and the small and large ragweed. Consequently

she had trouble from the last week in May, when the red top pollenates, until frost. She was very sensitive to the small ragweed and usually got an accompanying infection in the frontal sinus, in the antrum and the ethmoids, whicb would e her trouble until Christmas time. Attemps to desensitize with a solution of pollen had little effect. He had found that these patietns got along very well if they were instructed that they were sensitive to a certain pollen, for they would stay away from it. They had found that injection of hay fever pollen produced difficulty in breathing and started an asthmatic condition. It has been found to irritate the eye when dropped into it, just as it does the nose. In damp weather, when the pollens cannot fly these patients have much less trouble.

Dr. McGinnis tbought that the pollen extracts are useful in diagnosis and some people apparently get a certain measure of relief from them.

Dr. Norval Pierce admitted that he had not gone into this subject very deeply, having heen appalled by the complexity of it. The terms themselves, sensitization and desensitization, are more or less vague. The fact that there is skin reaction in cases with certain nasal symptoms does not necessarily mean that there is a connection between the two. Several years ago he carried out with the greatest care the instructions that Dunbar gave, but the vast majority of cases were unimproved. He thought perhaps the most fortunate results were gained from the dandelion cases. He thought that the exact cause or causes of these conditions was not known. He cited the case of a young lady with a pronounced vasomotor disturbance of the nose. They were unable to determine that she was sensitive to anything especial, after going through a certain number of foods and of pollens. He then learned that she was heing courted and influenced the mother to prevail upon her to desist somewhat. The young man went away and the rhinitis disappeared completely. She had all the symptoms of a pronounced vasomotor disturbance and Dr. Pierce wondered wbether she was sensitive to her own ovarian secretions.

Dr. Pierce thought that it could be stated that it is bad practice in these cases to tear out the architecture of the nose to cure them. That it is absolutely wrong to open up tbe so-called hyperplastic ethmoids. The one thing that had given him most success in these cases was cauterization of the four anterior sensitive portions of the nose with trichloracetic acid. meaning the anterior head of the middle turbinates and the adjoining middle meatus, the tuberculum of the septum and the anterior heads of the inferior turbinates. This had given relief for a month or six weeks, when it was repeated.

Dr. Robert Sonnenschein reported the case of a professional gentleman, aged thirty-four, who had had hyperesthetic rhinitis for some years. The principal symptom was that a stream of clear fluid would frequently issue from his nose. Careful examination, including blood pressure, blood counts and urinalysis, was negative, as were radiographs of the sinuses. He was tested with thirty or forty proteins without showing sensitization. Dr. Pierce also examined him carefully and a small mass, not definitely a polyp, was located high up in the middle meatus of the right side. On his suggestion this was carefully removed, and the anterior ethmoid cells were opened up without disturbing the middle turbinate. This occasioned slight, if any, improvement. Thyroid extract was given for a time. Trichloracetic acid gave considerable temprary relief. Atropin, 1/250 of a grain three times a day, gave relief without any dryness of the throat or other unpleasant reaction. Real comfort was obtained by taking this for a week or ten days at a time. He has freedom for a short time and then the process repeats itself.

Dr. Sonnenschein confirmed Dr. Pierce's statement that the use of trichloracetic acid gave considerable relief for a time. After the demonstration of a case by Dr. Beck several months ago, at which time the deficiency of certain vitamins was discussed in relation to nose and throat conditions. Dr. Sonnenschein had treated a number of cases with crude cod liver oil, but the results were disappointing. A number of patients examined by Dr. Sutton and found to be sensitized to certain pollens had been relieved.

Dr. Otto J. Stein (closing) said that ordinarily the subject of alcohol excited a great deal of interest and stimulated discussion. He inferred that his method had been used very little by those in the audience, although he recalled several gentlemen in the city who had used it, and regretted that they were not present to tell their experiences. Any method of treatment which was valuable in this puzzling condition should be welcomed by every one.

He had always felt that there were two main factors present in these cases: first, that the patient is hypersensitive or has an idiosyncrasy to some irritant or irritants, and that sensitiveness is due to some condition within the body fluids, be the irritant within the body or without. In the nose the manifestations are principally in the nose, throat and eyes on account of the vast peripheral distribution of the nervous system; that is, the fifth nerve. If irritants are kept away from the susceptible condition there is no manifestation. The great future of the work lies in working out the chemistry of the body fluids, showing why these conditions occur. He believed most cases would be found to be sensitive to more than one irritant and for that reason there are many failures in the vaccine remedies. The element of vasomotor change has been noted in many instances.

Dr. Stein did not go into statistics, feeling tbat he might be accused of making a statement which he could not substantiate. In the case mentioned by Dr. McGinnis, that continued having hay fever in spite of desensitization treatment, he tbought it was possibly another one of the cases in which there was some protein change that was not desensitized.

The statement made by Dr. Pierce, that his best results were obtained by cauterizing the membrane at certain well-known areas was interesting. The patient subjected to irritants at the cauterized areas will not react because he is desensitized. Dr. Stein thought he would get better results if he desensitized the nasal nerve at its orifice into the nose. Trichloracetic acid he thought was a well-known remedy and Dr. Ingals and others had used the electric cautery. Wonderful results had been reported by irrigating the antrum, and of course some cases are much better after the antrum is wasbed out.

Another interesting question concerned tbe role played by the endocrines in changing the body fluids. May not such an imbalance of the various endocrines so effect metabolism as to provoke a sensitiveness? He believed this might explain Dr. Levy's case and tbat of Dr. Pierce. He recalled an interesting case of frank rhinoorhea following exposure from a long dusty automobile ride. It was a vasomotor proposition and the patient was treated by several physicians with all the well-known remedies, but was only relieved by Dr. Stein's use of alcohol injections. One injection into the two anterior nasal nerves relieved her. She had no further trouble for some years, when she had a similar attack following another automobile ride. Two injections again produced instantaneous relief from the profuse discharge. Dr. Stein always avoids using suggestion in any sense, because of the peculiar role it plays in the symptomatology.

Dr. G. Thomsen von Colditz presented a thesis entitled: "Treatment of Otitis Media with Tuberculin."

ABSTRACT

In treating suppurative otitis media it is important to take into consideration whether or not a patient is tuberculous, either having an active process or a latent infection. To detect this, a tuberculin test should be made as part of the routine examination in every case of suppurative otitis media. The intra-cutaneous test is the most valuable.

Dr. von Colditz has treated a number of cases of suppurative otitis media which did not respond to any one or combination of conventional treatments, but which gave a marked reaction to the

intra-cutaneous tuberculin test. After these tuberculin injections, with no other treatment except keeping the auditory canal clean and packed with gauze or cotton, the ears were cured and the patient's general health was improved.

(*To be continued*)

GREENE COUNTY

The Greene County Medical Society met at Carrollton, Ill., on Friday, March 9, 1923. After partaking of an excellent dinner provided by the physicians of Carrollton, at Hotel Pearson, the members assembled at the Illini Club rooms for business and program.

In the absence of the president and vice-president, the secretary called the meeting to order and Dr. Howard Burns was selected as chairman of the meeting.

The minutes of the last stated meeting was read and approved.

Dr. F. H. Russell of Eldred was elected censor to succeed Dr. W. W. Billings, removed from the county.

Drs. W. T. Knox and Wm. H. Garrison were elected delegates to the state convention.

The application of Dr. A. R. Jarman of White Hall was received for membership and referred to the censors for report at the next meeting.

A motion prevailed that Dr. Jarman be given the privilege of the floor. Motion carried, that unfinished business from former meeting be postponed on account of small number in attendance.

Dr. F. H. Russell read a well prepared paper on "Selected and Neglected Remedies," Dr. F. N. McLaren a paper on "Selected Remedies," both of which were exceptionally good and brought forth free discussion. The censors announced a basket picnic for doctors and families at White Hall Chautauqua Grounds at the regular meeting date in June, no program, further than pressing business properly to come before the society.

W. T. Knox,
Secretary.

Marriages

Carl Cohen, Atlanta, Ill., to Miss Della L. Sporn of Chicago, February 11.

William Artis Dawson to Miss Harriette Marie Reder, both of Chicago, December 31.

John Maurice Hayes, Decatur, Ill., to Miss Helen D. Hogan of Assumption, recently.

Leland Gilleland Hedges, Chicago, to Miss Ethelyn Blanche McMillan of Rochester, N. Y., January 10.

John Kercher to Mrs. Clara Renker, both of Chicago, March 17.

Morris C. Marcus to Miss Evelyn Neuman, both of Chicago, February 25.

Laetitia Belau to Mr. John C. Alford, both of Chicago, March 10.

Personals

Dr. Albert J. Roberts has been elected president of the La Salle County Tuberculosis society. Reports at the annual meeting of the society indicated a flourishing condition with sales of Christmas seals amounting to $2,963.97.

Dr. F. N. Cloyd of Danville gave an address on "Fractures of the Pelvis," at the March meeting of the McLean County Medical society.

Dr. James S. Johnson of Cairo succeeded Dr. F. M. Harrell as president of the Alexander County Tuberculosis association at the annual election, last month. A bill has been introduced in the legislature under which the counties of Alexander, Pulaski and possibly Union can establish a tuberculosis sanitarium together.

Dr. Emil Windmueller of Woodstock has sold his building and practice to Dr. Hyde West and has removed to Los Angeles.

Dr. D. D. Raber was reelected for the third term county physician for McLean county.

Dr. T. H. Culhane of Rockford writes to the Rockford papers that the tour of the American College of Surgeons is not the "complete rest and relaxation" some of the tourists expected. On the contrary scientific meetings were organized and those who refused to participate were threatened with a ducking in the drink.

Governor Small has issued a proclamation designating the week of April 22 as health promotion and safety week.

Dr. Albert W. Bradford has returned to his home in Lacon from the Proctor Hospital where he has been a patient with a broken leg for seven weeks.

Dr. George T. Palmer, president of the Illinois State Tuberculosis Association, lectured at Louisville recently, during the celebration of "Health Week."

Dr. Charles E. Humiston and Dr. Frederick W. Besley gave addresses at the annual banquet of the Lake County Medical Society at Waukegan, March 1.

The Joseph A. Holmes Safety Association of Washington, D. C., has awarded the gold medal of the society to Dr. Andrew W. Springs, Dewmaine, for his heroic work in the Royalton Explosion of October, 1914.

At the fifty-sixth regular meeting of the Chicago Society of Internal Medicine, March 26, Dr.

J. Curtis Lyter, St. Louis, will speak on "The Pathways of the Mediastinum, Lungs and Pleura."

Dr. Frank Smithies has resigned as gastroenterologist and attending physician to the Augustana Hospital, to assume the duties of physician-in-chief and head of the department of internal medicine at St. Elizabeth's Hospital.

At a meeting of the Laboratory of Surgical Technique of Chicago, March 22, Dr. Leon Asher, professor of physiology at the University of Berne, Switzerland, spoke on "The Physiology of the Thyroid Gland from the Clinical Standpoint." Dr. A. J. Ochsner, presided.

Dr. Louise H. Keator, formerly a medical missionary to China, has been transferred to the Dixon State Hospital from the Lincoln State School and Colony.

News Notes

—St. Mary's Infirmary, Cairo, has recently added an annex for tuberculous patients, a nurses' home and a new wing to the main hospital building at a total cost of $225,000.

—A new three-story addition will be erected at St. Vincent's Hospital, Taylorville, at a cost of $75,000.

—A fifty-bed hospital is being erected by the Ingalls-Shepard Forging Company for the city of Harvey. The institution will cost $250,000. Lodges, fraternities and social societies will raise $20,000 for the furnishings and equipment.

—The campaign to collect two-thirds of a million dollars which was necessary before one-third of a million left by the will of John P. Wilson, for the benefit of the Children's Memorial Hospital, could be secured, was successfully completed, March 3.

—Following the outbreak of smallpox at Rock Island, the city physician, Dr. A. N. Muller, has issued orders that every schoolchild must be vaccinated within the next ten days or remain away from school indefinitely. The board of health asks the public's cooperation in stamping out the threatened epidemic.

—It is reported that "Prof." J. B. Cottaze, who maintained an office on West Madison Street, was fined $25 and costs for practicing medicine without a license, by Judge Adams in the municipal court, March 13. Cottaze, it is alleged, collected thousands of dollars from his patients. The judge ordered the "professor" to leave the city.

—At a meeting of the American Conference on Hospital Service, held in Chicago, March 5, the following officers were elected for the ensuing year: president, Dr. Frank Billings, Chicago; vice-presidents, Drs. Andrew R. Warner, Chicago, and Linsly R. Williams, New York, and treasurer, Dr. Harry E. Mock, Chicago. Dr. Fred C. Zapffe, Dr. Linsly R. Williams and Miss Sarah B. Place, R. N., Chicago, were elected to the board of trustees (term expires 1926).

—Dr. Frank J. Pokorney, Chicago, has been appointed medical examiner for Cook County, it was announced by the president of the board of county commissioners, March 3. Preparation of a county civil service eligible list and the necessity for examination by a physician of many of the applicants caused the appointment of Dr. Pokorney. All persons about to be retired from the county's service on pensions or because of disability will also be examined.

—The executive officers of the National Tuberculosis Association held a three day session at the Hotel LaSalle, February 26-28. It was stated there are 65,000 hospital beds available for tuberculous patients in the United States and that there are more than 1,000,000 cases of the disease. A standard system of home treatment teaching which would permit the discharge of a patient from the sanatorium in three months was outlined. A visiting service would care for the patient following his discharge. A total of $5,000,000 was the goal set by the conference for 1923.

—Under a cooperative arrangement between the state departments of public health and welfare, a campaign is on foot for applying the Schick test to inmates of state institutions. The work will be carried out under the direction of the health department, which will also furnish toxin-antitoxin for the immunization of all those giving positive reactions. The boys' school at St. Charles carried out the plan some time ago, and all new-comers are now tested on arrival, and immunized when nonimmune to diphtheria. During the week of March 11-17, the 2,000 inmates of the Lincoln State School and Colony were Schick tested, and follow-up work will proceed immediately. Other state institutions in which danger from diphtheria exists will be treated in like manner.

—A field physician from the state department of public health has recently completed a survey of the eight county tuberculosis sanatoriums now in operation in Illinois. The findings show a maximum capacity of 306 beds. The average number of patients cared for in the eight institutions is 251, while the average cost of maintenance each month for all the sanatoriums is $19,200, or slightly more than $76 a month for each patient. The survey showed further that three of the sanatoriums hold diagnostic clinics; all but one conduct dispensary service, and all but two carry on, in some measure at least, county tuberculosis and public health work. The lowest appropriation for any of the sanatoriums for 1923 is $10,000, but the total amount available in that instance is nearly $30,000, a contract with the U. S. government with reference to tuberculous ex-service men making up the difference. All the seven other sanatoriums have appropriations for 1923 ranging from $25,000 to $40,800 for maintenance, and in two cases extra appropriations for building.

—The clinics for crippled children held in Kewanee have had 86 children examined by Dr. C. W. East of the State Department of Health and have accomplished much good through the active financial support of the local Rotary Club, the McHenry county Chapter Red Cross and the county commissioners. St. Francis hospital has furnished quarters and the cooperation of its staff.

—The clinic held by DuPage County Tuberculosis society in February was such a success, 400 patients having been examined that arrangements have been made for a permanent free diagnostic clinic.

—Drs. W. W. Greaves and E. W. Weis were elected directors of the Tuberculosis Society of LaSalle-Peru-Oglesby at the annual meeting, March 13.

—At the meeting of the Vermilion County Medical Society, March 6, States Attorney John Lewman gave an address on "The Relations of the Medical and Legal Professions." Dr. Alfred A. Strauss of Chicago, gave a talk on "The Surgical Management of Gastric and Duodenal Ulcers" illustrated by lantern slides.

—At the meeting of the Winnebago County Medical Society, March 6, Dr. Henry Woltmann gave an address on "The Value of Neurological Diagnosis." Dr. A. W. Adson, also of the Mayo Clinic, related "The Results of Surgical Treatment of Spinal Cord Tumors."

—The Logan County Medical Society met at the Lincoln State School and Colony, March 22, as guests of Dr. Paul Schroeder. After the dinner Dr. Hull of the State Laboratories, Springfield, gave an address on "Whooping Cough, Schick and Vaccinia." The following officers were elected: president, Dr. B. M. Barringer; first vice-president, Dr. C. Rembe; second vice-president, Dr. G. Connelley; secretary-treasurer, Dr. E. C. Gaffney; delegate, Dr. H. S. Oyler; alternate, Dr. E. C. Gaffney; censor, Dr. C. C. Montgomery.

Deaths

Edward Bair, Murphysboro, Ill.; Medical College of Indiana, Indianapolis, 1890; died, March 7, or an overdose of heroin hydrochlorid, presumably self-administered.

Richard Franklin Bennett, Litchfield, Ill. (licensed, Illinois, 1887); served for five terms as mayor of Litchfield; member of the state board of health, former president of the school board and superintendent of the Hospital for the Insane, Anna; aged 83; died, March 9, of senility.

Albert Sanders Burtt, Momence, Ill.; New York University Medical College, New York, 1878; a Fellow, A. M. A.; aged 68; died, March 10, of pneumonia.

Samuel Albert Graham, Lincoln, Ill.; Rush Medical College, Chicago, 1887; a Fellow, A. M. A.; formerly district health officer for Central Illinois; for five years assistant superintendent of the Kankakee State Hospital, Kankakee; superintendent of the Lincoln State School and Colony, Lincoln; aged 74; died March 10, of pneumonia.

Clarence Augustus Jacobson, Chicago; University of Illinois College of Medicine, 1916; served in the M. C., U. S. Army, during the World War; on the staff of the U. S. Veterans' Hospital No. 76 (Edward Hines, Jr., Memorial), where he died, aged 29, March 22, of appendicitis.

James Joseph Roach, Chicago; Rush Medical College, Chicago, 1901; member of the Illinois State Medical Society; professor of operative surgery and pathology, Chicago Medical College; formerly instructor in anatomy at Northwestern University Medical School, and on the staffs of the Cook County, Fort Dearborn and St. Bernard hospitals; aged 45; died, March 24, of cerebral hemorrhage.

Jesse Augustine Swem, Henry, Ill.; American Medical College, St. Louis, 1884; aged 64; died, March 1.

Robert Alfred Windett, Aurora, Ill.; Rush Medical

College, Chicago, 1887; a Fellow, A. M. A.; aged 63; died, March 4, following a long illness.

Samuel William Allen, Chicago, University of Arkansas Medical Department, Little Rock, 1882; a Fellow A. M. A.; aged 61; died, February 10.

Joseph Oliver Balcar, West Franklin, Ill.; Rush Medical College, Chicago, 1918; a Fellow A. M. A.; age 30; died, February 12, from appendicitis.

Eugene Francis Daum, Chicago; Northwestern University Medical School, Chicago, 1900; member of the Illinois State Medical Society; served in the M. C., U. S. Army, during the World War; aged 46; died, March 1, of acute endocarditis following influenza.

Thomas Oscar Edgar, Dixon, Ill.; Northwestern University Medical School, Chicago, 1907; a Fellow A. M. A.; member of the American Academy of Ophthalmology and Oto-Laryngology, the American Laryngological, Rhinological and Otological Society and the Chicago Ophthalmological Society; aged 51; died, March 5, of bronchopneumonia.

George Snow Fortier, Chicago; College of Physicians and Surgeons, Chicago, 1907; member of the Illinois State Medical Society; aged 51; died, February 20, from pneumonia.

Cassius W. Gould, Chicago; University of Buffalo (N. Y.) Department of Medicine, 1872; aged 72; died, February 20, from pneumonia.

James C. Harrell, Omaha, Ill.; Eclectic Medical College of Pennsylvania, Philadelphia, 1870; also a druggist; aged 75; died in February, of mitral regurgitation.

David Wesley Harris, Carriers Mills, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1879; also a druggist; aged 66; died, February 10, of cerebral hemorrhage.

May Michael, Chicago; Northwestern University Woman's Medical School, Chicago, 1898; a Fellow A. M. A.; member of the Chicago, and the Central States pediatric societies; attending physician to the Chicago Home for Jewish Orphans, on the staff of the Cook County Hospital, the Mary Thompson Hospital and the Chicago-Winfield Tuberculosis Sanatorium, Winfield; aged 47; died, March 15, of pneumonia.

Ulysses Grant Richardson, Chicago; Barnes Medical College, St. Louis, 1895; aged 56; died, March 13, of pneumonia.

A. Minnie Russell, Speer, Ill.; Woman's Medical College of Baltimore, 1896; aged 58; died, February 6, from pneumonia.

James R. Scott, Edgewood, Ill.; Cincinnati College of Medicine and Surgery, 1863; Civil War veteran; practitioner of Edgewood for more than half a century; aged 82; died, February 8, from senility.

Domer Gheen Smith, Freeport, Ill.; Jefferson Medical College of Philadelphia, 1899; a Fellow A. M. A.; for several years secretary of the Tri-State Medical Society (Illinois, Iowa, Wisconsin); aged 56; died, February 28, of pneumonia.

Espy L. Smith, Chicago; Chicago Homeopathic Medical College, Chicago, 1883; a Fellow A. M. A.; aged 70; died, March 5, of heart disease.

William E. Stedman, Sullivan, Ill.; Kentucky School of Medicine, Louisville, 1880; formerly member of the state legislature; aged 75; died recently, of influenza.

Franklin Pierce Tyler, Galesburg, Ill.; Rush Medical College, Chicago, 1885; aged 68; died, February 7.

George Washington Westermeier, Cherry, Ill.; Medical Department of Washington University, St. Louis, 1908; member of the Illinois State Medical Society; served in the M. C., U. S. Army, during the World War; aged 39; died, February 28, of pneumonia.

Charles Glendenning Willson, Chicago; Wisconsin College of Physicians and Surgeons, Milwaukee, 1896; aged 63; died, March 7, of chronic nephritis.

George Harcourt Willis, Winslow, Ill.; Rush Medical College, Chicago, 1900; served as mayor of Winslow for two terms, and for eleven years as secretary of the board of education; aged 50; died, February 17, of pneumonia.

Enos John Hughes, Chicago; College of Physicians and Surgeons, Keokuk, Iowa, 1876; University of Michigan Medical School, Ann Arbor, 1886; for more than thirty years medical examiner for the Baltimore and Ohio Railroad; aged 65; died, March 2, of heart disease.

George Frank Lydston, Chicago; Bellevue Hospital Medical College, New York, 1879; a Fellow A. M. A.; died in California of pneumonia, March 14. Dr. Lydston was born at Tulumne, Calif., in 1858. After his graduation he became interne at the Charity Hospital, New York, and later, resident surgeon of the New York State Immigrant Hospital. He was lecturer on genito-urinary diseases in 1882 and later professor of genito-urinary surgery and venereal diseases in the College of Physicians and Surgeons, Chicago. He was author of numerous books of both scientific and literary character, including a "Text-book on Genito-Urinary and Venereal Diseases," on the "Surgical Diseases of the Genito-Urinary Tract," and on "Impotence and Gland Transplantation." Most of his recent contributions to medical literature were devoted to the possibilities of securing rejuvenation by transplantation of glands. Among his contributions to general literature were a social text on diseases of society, a play "The Blood of the Fathers," and several novels, such as: "Over the Hookah," "Poker Jim," and "Trusty 515." Dr. Lydston was a man of aggressive personality and a writer of ability, with keen and satirical humor.

Minerva A. Kline, Chicago; Hahnemann Medical College and Hospital of Chicago, 1892; aged 60; died, March 2; at the Hahnemann Hospital, of myocarditis.

Oscar W. Whitacre, West Frankfort, Ill.; St. Louis College of Physicians and Surgeons, St. Louis, 1909; member of the Illinois State Medical Society; aged 40; died, February 11, of tuberculosis.

ILLINOIS MEDICAL JOURNAL

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THE ILLINOIS STATE MEDICAL SOCIETY

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ILLINOIS MEDICAL JOURNAL

Puhlished monthly by The Illinois State Medical Society under the direction of the Puhlication Committee of the Council.

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Send original articles and all communications relating to advertisements to Dr. Charles J. Whalen, Editor, 6221 Kenmore Avenue, Chicago.

Membership correspondence to Dr. Wm. D. Chapman, Silvis, Ill.

Society proceedings and news items and changes in the mailing list to Dr. Henry G. Ohls, Managing Editor, 927 Lawrence Avenue, Chicago.

Contributors will submit all copy for publication typewritten on standard size paper and douhle spaced. Copy not complying with this rule will he returned, if convenient.

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Editorial

ATTENTION

All members of the Illinois State Medical Society who are interested in Industrial Medicine and Surgery are invited to attend the first meeting of the Illinois Society of Industrial Medicine and Surgery to be held at Hotel Orlando, Decatur, Ill. The meeting will convene at nine A. M. on Tuesday, May 15th, 1923.

The Illinois Society of Induction Physicians and Surgeons will convene at 9 A. M. on Tuesday, May 15, 1923, at Decatur, Illinois. The meeting place will be Orlando Hotel.

This organization has for its purpose the improvement of medical and surgical work as it applies to industry. All physicians and laymen interested in industrial medicine and surgery are cordially invited to attend this meeting. You will confer a favor on the Publicity Committee by broadcasting this information.

The program for the day will be:

Dr. A. B. MacQuillan, East St. Louis:
"Treatment of Fractures of the Metatarsal Bones."
Discussion opened by Dr. J. W. Seids, Moline.

Dr. E. H. Weld, of the Rockford Clinic:
"Injuries to the Os-calcis."
Discussion opened by Dr. I. G. Harney, East St. Louis.

Dr. C. R. G. Forrester, Chicago:
"Practical Industrial Surgery."
Discussion opened by Dr. J. H. Siegel, Collinsville.

Dr. Edwin W. Ryerson, Chicago:
"Mechanical Appliances in the Repair of Fractures."
Discussion opened by Dr. E. P. Sloan, Bloomington.

Dr. Samuel C. Plummer, Chicago:
"Standardization of the Treatment of Fractures."
Discussion opened by Dr. Harry E. Mock, Chicago.

Dr. Don Deal, Springfield:
"Better Functional Results in Treating Certain Fractures."
Discussion opened by Dr. Edwin W. Ryerson, Chicago.

Dr. H. W. Wellmerling, Bloomington:

"Blood Transfusion in Emergency."
Discussion opened by Dr. H. W. Abelmann, Chicago.

Mr. George Snyder, Chicago:
"A Lawyer's Viewpoint of the Doctor's Relations to the Parties Involved in Accidents Under the Workman's Compensation Act."
Discussion opened by Mr. Thomas E. Cambridge, Chicago.

WILLIAM B. FISK, M. D.,

KILL CO-OPERATION WITH THE SHEPPARD-TOWNER MATERNITY ACT IN ILLINOIS

A pamphlet entitled "Another Word On The Maternity Bill" was signed by a dozen doctors trying to justify Illinois' co-operation with the Sheppard-Towner Maternity Act, and was circulated among the physicians throughout the State.

This pamphlet compels from me, righteous indignation. A few of many criticisms are:

That in some of the states, of which Illinois is one, the birth registration has been so incomplete that statistics based on such registration must be wrong. So many varieties of returns have been quoted that hardly two are alike—the Census, Child Labor and Department of Health as well as private, industrial and Health Insurance companies. Figures are apt to be quoted in various methods and scarcely an accurate comparison can be made. One authority has put a statement in his book charging New York City with 80,000 criminal abortions per annum—so common is the crime that "everywhere reigns the observation,—where no life is, then no crime." When maternal deaths do not occur legal action rarely takes place and all those who have studied the matter know full well that official figures of incidence are no criteria as to the actual number. It is unfair to publish percentages of deaths, when the births are not all recorded and the deaths are so recorded and no difference is made between mortality and morbidity of the cases.

Again, the paper is a repetition of the quotations of the Bill, and many of the answers to these objections are merely denials of them, without proof or explanation as for example objections to the 21 reasons given in 1 and 2 and 6.

Objection 13. The affirmative ridicules the danger of salaried positions but does not deny it. I have just been informed that California has issued a report of some of the work done where the Sheppard-Towner Act was put on a trial basis, and so far it shows the use of money and appointments totally opposed to the uses of which the Bill is supposed (?) to be used for in the Maternity Infant work. A number of States have been quoted as accepting when the qualifications and restrictions of acceptance have not even been given; for example, some States accept for only a short period or only till the next sitting of the Legislature.

Objection 14. This follows the same trend, belittling the issue but *allows* the possibility.

Objection 16. The Act will be influential even though it is not compulsory, and in the foreign born or uneducated classes, there is always a fear of any official authority or anything that even resembles it. *Again, unscrupulous aids can and do use such methods to gain their own ends and the people do not know what to believe. Note the methods used in insurance cases, especially accidents, where the agents visit and try to persuade patients they must see and show damage to the Company Doctor and yet never notify the family attendant.*

Objection 17. There may be a difference of opinion but the leaders in law, state government, authors, doctors, workers in Civics and *thinkers* are agreed this is a *Paternal measure* and it may be remembered that years ago Henry Ward Beecher said "God keep us from a paternal government."

Objection 19. It is a vital objection—there should be no interference with the practice of obstetrics as this should be absolutely under physicians. The objector does not answer except to say it has *no foundation.* But the prospective mothers may well be confused between the advice they will receive under this Act and that furnished by their own physicians who actually attend them when ill. Federal authority reaches far in the lay mind and it certainly has the power. Section 3. "The Board shall elect its own chairman and *perform* the duties provided for in this Act." "The Children's Bureau of the Department of Labor shall be charged with the administration of this Act, except as herein otherwise provided, and the chief of the Children's Bureau *shall be* the executive officer. *It shall be the duty* of the Children's Bureau to make or cause to be made *such studies, investigations* and reports as *will promote efficient administration* of this Act." —This is authority and direction surely—and if analysed is *directly* up to the Board to force

issue to perform the duty imposed upon it by the Law.

Objection 20 and also No. 10. Puts the public health nurses as qualified to carry on the educational work. These may be trained fully or not, but this is positively wrong from the medical view point because the practice of obstetrics like other medical practice cannot be delegated to lay people with safety even to nurses.

In reading the objection 21 as to the amount of tax, the danger is minimized but does not point out the progressive increase which must naturally occur. Great Britain paid for Maternity child welfare at the beginning in 1914-'15, 22,318, 0.6 and in 1918-'19 it was £253,-000 or a grand total of £565,497 or in United States money $2,742,660.45 and this has more than trebled and there will be a natural increase as the work progresses.

A quotation says "The chief of the Children's Bureau of the Department of Labor announced that the Sheppard-Towner Maternity Law is proving successful in spite of the refusal of a number of the more important States to accept it, and in spite of the attacks that have been made upon the Act by *eminent* lawyers, physicians, and men of affairs." Yet you are told that this Bill has been sanctioned by "nearly everybody." We regret to say this is not so for those *directly concerned* in the work, who take care of the cases paid or not paid for their services, *are opposed* to this type of bureaucracy. Again, many have not heard or read the Bill for reasons known best to those who wish to force the law. Worse still, the bill is contradictory, is a blanket bill, divides power of authority, and for fear, perhaps of discussion, the Negative side has not been allowed discussion. At a recent "Forum" meeting the program speakers included a child's specialist representing chiefly only child welfare work. Obstetricians, both men and women, were absent. Question arose as to why Doctors and Nurses object to the Sheppard-Towner Act. To speak for these objectors and to explain their position, a representative was lacking. Although the time for discussion was declared closed, the audience became so persistent in its querying that a brief statement was allowed to be made from the floor in response to general demand. This shows why the Bill has never had a fair explanation in Clubs, Societies, etc., from trained obstetric and infant specialists and general practitioners speaking against the points of the Bill. Yet the Forum was for the express purpose of presenting both sides of a question for understanding but not for passing upon the measures in either side. Only recently Dr. Chas. J. Cummings presented the resolution against the law to the House of delegates of the Medical Society of the State of Pennsylvania in agreement with the American Medical Association (Journal p. 1437-1922). To accomplish the encroachment on State Rights, the Federal government offered to make available an appropriation conditioned on expenditure by the different States and their co-operation in giving effect to the Law. New York State has rejected the Bill, so did Massachusetts, Rhode Island, Louisiana and Washington. We are told the great service the Bureau Bills have been to the people, yes, so great is this service, that soon the bills will be in entire control of the people who stood for Democracy and Freedom. The Child Bureau has now undertaken the Recreation Service work. If the Bureaucracy is effective what about the Volstead, the Harrison Narcotic, the Indian Affairs, the Veterans with its billion dollar fund; have any of these succeeded? No! Many service men today have seemingly not received sick benefit care as they should be doing. Other acts too have not proven efficient, even the Good Roads Bill. This may be due to State poor road building but if so why is the Bureau not supervising by the qualified Engineers of the Army and Congress to see the work is well enough done to last over a year? Low mortality in maternity cases is given as the object in view in the various reports issued by the Departments in charge for the maternity act. State benefits however will not prevent deaths of expectant mothers who have been made unfit by poverty, immorality, social excesses, heredity, venereal diseases, etc., and who constitute the greater part of the half of one per cent. or more of mothers who die from child birth causes. The statistics given as a cause of maternity deaths are not well proved. Cerebral hemorrhage in intra-uterine deaths and infants during the first few days is most constant finding of post-mortem (Losee, N. Y.) due to intra-uterine asphyxia, trauma, hemophilia, thymus and lymphaticus due to improved midwife training. Between 1902 and 1914 maternal mortality from puerperal sceptic diseases in England and Wales has decreased from 118 to 75 per million female

population (Carnegie United Kingdom Trust, 1917).

"The best mothers do not get their ideas on child-raising from books."

Two hundred families of Sharon, Kansas, have hired a community physician. Each family pays $15.00 per year for necessary attention.

Don't create so many new Laws. We have so many existing agencies aiding now they overlap. Help present laws to carry on better than before; improve and render them effective. Teach, lecture, show how to live and to recreate in the great out of doors. Give help in the home so the mother can rest and care for her family and *don't infringe on personal liberty.*

Soviet Russia has done some unbelievable things, so has Germany and other countries where State Medicine became a menace and Bismarck remarked "it would bind the working people to the state." It did, so their individuality was lost and where are they today? Government can do, and it does do, mighty drastic things when once it gets under way with a false idea and creates dangerous power for unfit officials, many of whom are arbitrary and uneducated for the task in hand.

Do not pauperize the people. Some would always refuse help, *others never.* Is organized or non-organized labor voicing the expression of the rank and file for it? No! Are the statistics in regard to mortality rate in Maternity true? No! Is it true we are so far behind other countries in this and maternal welfare? No! Even the New Zealand Bill quoted by Miss J. Rankin is incorrectly recorded and recent figures state New Zealand has the highest death rate for that country. The statement made that if this legislation is passed it will reduce defective population, lessen the need for State care of the insane, the indigent, tubercular, blind, alcoholic, the criminal, dope and tobacco habitues and for vice is questioned. Never—we only wish it would! The people of the State, the Law makers, must co-operate and live as they should; purify and cleanse, develop the Pioneer spirit for Faith, Hope, and Charity and trust in good men and true and serve the Creator and mankind as Lincoln did—Better thou a good and faithful servant to your God, country and welfare of the people.

1644 Morse Ave., Chicago.

Vida A. Latham, M. D., D. D. S.

ILLINOIS STATE MEDICAL SOCIETY

Seventy-third Annual Meeting

Decatur, May 15, 16, 17, 1923

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(Vice-Crawford, 1923, Deceased)
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C. E. Price—8th District, Robinson, 1923.
(Vice-Lillie, 1924, Deceased)
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H. P. Beirne—6th District, Quincy, 1924.
J. S. Nagel—3rd District, Chicago, 1925.
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C. S. Nelson—5th District, Springfield, 1925.
L. O. Frech—7th District, Decatur, 1925.

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ORDER OF PROCEEDINGS

Registration office in the left wing of the Exhibit Hall in the basement of Orlando Hotel.

First Day—Tuesday Morning

9:30—Diagnostic and Instruction Clinics of the Section on Eye, Ear, Nose and Throat, Palm Room, Orlando Hotel. Other Clinics, surgical or diagnostic: Local committee.

First Day—Afternoon

2:00—Call to order of the Society in General Session by the President, E. P. Sloan, Bloomington, in the ballroom, Orlando Hotel.

(a) Invocation, by Edward Warren Clippinger, D. D., Decatur.

(b) Address of Welcome, by Mayor of Decatur. (Elmer R. Elder.)

Report of the Chairman of the Committee on Arrangements, L. O. Frech, Decatur.

2:30—Call to order of the Secretaries' Conference, President R. O. Hawthorne, Monticello, in the ballroom annex.

First Day—Evening

8:00—Call to order of the House of Delegates, in the ballroom by President E. P. Sloan.

Second Day—Wednesday Morning

8:30—Call to order of the several sections for the reading and discussion of the papers of the program:

SECTION ONE—Call to order of the Section on Medicine in the Circuit Court room by the Chairman, E. W. Mueller, Chicago.

SECTION TWO—Call to order of the Section on Surgery in the Ballroom, Orlando Hotel, by the Chairman, Mather Pfeiffenberger, Alton.

SECTION THREE—Call to order of the Section on Eye, Ear, Nose and Throat, in the Palm Room Orlando Hotel, by the Chairman, A. L. Adams, Jacksonville.

SECTION FOUR—Call to order of the Section on Public Health and Hygiene in the County Court Room, by the Chairman, C. S. Skaggs, East St. Louis.

11:30—Adjournment for luncheon.

Second Day—Afternoon

1:00—Call to order of the Sections for the continuation of the program.

4:00—Meeting of the Medico-Legal Committee with its component society advisors, Ball-room annex, Orlando Hotel, C. B. King, Chicago, Chairman.

5:30—Adjournment for Dinner.

Second Day—Evening

7:30—Address: Robert Emmett Farr, M. D., Minneapolis, Minn. The Ballroom, Orlando Hotel.

8:30—Smoker and Entertainment for members, Orlando Hotel.

Third Day—Thursday Morning

8:30—Call to order of the House of Delegates for the election of officers, and of the Sections for the continuation of the program:

SECTION ONE—Palm Room.
SECTION TWO—Ballroom.
SECTION FOUR—County Court Room.
HOUSE OF DELEGATES—Circuit Court room.

11:00—ORATION IN SURGERY—G. Van Amber Brown, Detroit, Michigan, Ballroom, Orlando Hotel.

12:00—Adjournment for luncheon.

Third Day—Afternoon

1:00—Call to order of the Sections for the election of officers. For this assembly SECTION THREE will convene in the Ballroom Annex, Orlando Hotel.

1:20—Call to order in General Session, Ballroom, Orlando Hotel. Address of the President, E. P. Sloan, Bloomington.

Oration in Medicine, Martin H. Fischer, Cincinnati, Ohio.

Report of the House of Delegates.

Induction of the President-elect.

Continuation of the Section programs.

5:30—Final adjournment.

OFFICIAL PROGRAM

SECTION ON MEDICINE

Wednesday—8:30 A. M.—Circuit Court Room

Radium Emanation Ampoules in the Treatment of Cancer of the Tongue—Frank E. Simpson, Chicago.

Discussion—Oliver S. Ormsby, Chicago.

Present-Day Needs of Life Insurance Examinations—O. F. Maxon, Springfield.

Discussion—F. A. Causey, Peoria.

The Laity's Idea of the Physician—Buda Carroll Keller, Chicago.

Discussion—James H. Hutton, Chicago.

Duodenal Ulcer—Frank Deneen, Bloomington.

Discussion—George W. Parker, Peoria.

Co-Operation Between the Clinical Laboratory and the Physician—Josiah J. Moore, Chicago.

Discussion—Clifford U. Collins, Peoria.

Spontaneous Pneumothorax with a case report—C. George Appelle, Champaign.

Discussion—J. S. Mason, Urbana; Chas. S. Williamson, Chicago, and O. O. Stanley, Decatur.

Treatment of Lung Abscess—Herbert W. Gray, Chicago.

Discussion—Theodore Tieken, Chicago.

A Report of Some Unusual Tumors of the Gastro-Intestinal Tract—Daymon A. Brown, Peoria.

Discussion—Milton E. Rose, Decatur.

The Diagnosis of Latent Gall-Bladder Disease—Charles A. Elliott, Chicago.

Discussion—Allen B. Kanavel, Chicago.

An unusual case of Endocarditis with a report of a case—Milton E. Rose, Decatur.

Discussion—Daymon A. Brown, Peoria.

Treatment of Amebic Dysentery—A. A. Goldsmith, Chicago.

Discussion—E. I. Greene, Chicago.

Clinical Manifestations of Spirochaetal Strains—Robert E. L. Gunning, Galesburg.

Discussion—Robert L. Morris, Decatur.

Chronic Malaria From Clinical Aspects—Louis J. Petritz, Rockford.

Discussion—Robert W. Keton, Chicago.

The Problem of the Nervous Patient—Meyer Solomon, Chicago.

General Discussion.

Some of the Essentials in the Diagnosis and Treatment of Pericarditis with Effusion—E. S. Murphy, Dixon.

Discussion—O. F. Maxon, Springfield.

The Value of Standards of Infectivity in Venereal Diseases—Frank M. Phifer and N. K. Forster, Chicago.

Discussion—J. S. Eisenstaedt, Chicago.

SECTION ON SURGERY

Wednesday Morning—8:30 A. M.—Ballroom, Orlando Hotel

The Treatment of Fibroids of the Uterus—E. C. Roos, Decatur.

Discussion—Ralph Bettman, Chicago.

The Surgical Aspects of Chronic Pancreatitis—Frank D. Moore, Chicago.

Discussion—Frank Nichol, Chicago, and F. Buckmaster, Effingham.

Surgical Errors—Ralph McReynolds, Quincy.

Discussion—F. G. Dyas, Chicago.

Tuberculosis of the Coccyx—Vernon C. David, Chicago.

Discussion—R. W. McNealy, Chicago, and Ben D. Baird, Galesburg.

Cervical Ribs and Exostoses—John F. Sloan, Peoria.

Discussion—Geo. G. Davis, Chicago.

Indications and Technique for Major Chest Surgery—Don Deal, George Thomas Palmer and Herman H. Cole, Springfield.

Discussion—Edw. S. Blaine, Chicago.

Surgical Treatment of Pulmonary Abscess—Ben D. Baird, Galesburg.

Discussion—Vernon G. David, Chicago.

Urgent Surgery of the Stomach and Duodenum—Karl A. Meyer, Chicago.

Discussion—Geo. Amerson, Chicago, and J. G. Young, Pontiac.

Carcinoma of the Stomach—Frederick G. Dyas, Chicago.
Discussion—Frank R. Morris, Chicago, and Ralph McReynolds, Quincy.
The Surgical Treatment of Chronic Intestinal Stasis—J. G. Young, Pontiac.
Discussion—Karl A. Meyer, Chicago.
Immediate Reduction in the Treatment of Fractures—George G. Davis, Chicago.
Discussion—S. M. Miller, Peoria.
End Results in 1,000 Tonsillectomies, a follow-up study—Walter Stevenson, Quincy.
Discussion—Herman H. Cole, Springfield.
Ventriculography—Its Place in Brain Surgery—Geo. Davenport, Chicago.
Discussion—C. C. Rogers, Chicago, and W. H. Gilmore, Benton.
Chronic Septic Splenomegaly Syndromes — F. Buckmaster, Effingham.
Discussion—Frank D. Moore, Chicago.
The Treatment of Empyema. A Plea for the Closed Method—Ralph Bettman, Chicago.
Discussion—Don Deal, Geo. T. Palmer, and Herman H. Cole, Springfield.
Roentgen Ray Findings in Perforated Abdominal Viscus—Roger T. Vaughan, Chicago.
Discussion—Karl A. Meyer, Chicago, and John Moore, Benton.
The Value of the X-Ray Reports as a Liaison Between Roentgenologist and the Referring Physician—Edw. S. Blaine, Chicago.
Discussion—John F. Sloan, Peoria.

SECTION ON EYE, EAR, NOSE AND THROAT

Tuesday—May 15—8:30 A. M. to 5 P. M.
Palm Room, Orlando Hotel

Diagnostic and Instruction Clinic.

The Use of the Schlitt Lamp—Robert Von der Heydt.
The Technique of Cataract Extraction — With Demonstration on Pig's Eyes—H. W. Woodruff, Joliet.
Acute Infection of the Nasal Sinuses—Charles M. Robertson, Chicago.
Chronic Infection of the Nasal Sinuses—A. H. Andrews, Chicago.
Acute Suppurative Otitis Medias — George W. Boot, Chicago.
Chronic Suppurative Otitis Medias—Joseph C. Beck, Chicago.
Demonstration of the Anatomy of the Brain and Cranial Nerves on Recent Specimens—Jacob Burkholder, Chicago.
Operations on the Eye Muscles—Moving Picture Demonstration—H. W. Woodruff, Joliet.

Tuesday Evening—May 15—6 P. M.
Banquet, Orlando Hotel

Wednesday—8:30 A. M. to 5:00 P. M.
Orlando Hotel

A Further Report on the Status Lymphaticus—Richard J. Tivnen, Chicago.
Discussion—E. R. Crossley, Chicago.
Carcinoma of the Larynx—Frank J. Novak, Jr., Chicago.
Discussion—Otto Freer, Chicago.
Unusual Eye Manifestations of Cerebral Syphilis—Carroll B. Welton, Peoria.
Discussion—Raymond R. Harrington, Chicago.
The Keeping of Records in the Practice of Oto-Laryngology—Joseph C. Beck, Chicago.
Discussion—Frank Allport, Chicago.
Nine Years of Clinical Research on the Trachoma Question—Edward E. Edmondson, Mt. Vernon.
Discussion—James S. Johnson, Cairo.
The Technique of the Trephining Operation for Glaucoma—H. W. Woodruff, Joliet.
Discussion—Willis O. Nance, Chicago.
Heterophorias of Nasal Origin—A. H. Andrews, Chicago.
Discussion—Thomas Faith, Chicago.
Cataract Extraction with Complications: 1. Non-Union of Wound. 2. In Presence of Facial Paralysis—L. Ostrom, Rock Island.
Discussion—Solomon Jones, Danville.
Local Anesthesia in Mastoid Operations—George W. Boot, Chicago.
Discussion—H. P. Bagley, Galesburg.
Recurrence of Tonsils After Tonsillectomy — Charles H. Long, Chicago.
Discussion—Charles M. Robertson, Chicago.
A Tympanic Tumor—E. C. Duntley, Bushnell.
Discussion—J. Neiss, Carmi.
Diabetic Lesions of the Eye—Francis Lane, Chicago.
Discussion—C. O. Schneider, Chicago.
Negative Pressure in the Treatment of the Diseases of the Nose and the Accessory Sinuses—G. C. Otrich, Belleville.
Discussion—Arthur Geiger, Chicago.

Etiology of Ocular Diseases—Michael Goldenburg, Chicago.
Discussion—O. E. Fink, Danville.
Post-Graduate Teaching—D. D. Barr, Taylorville.
Discussion—C. O. Nelms, Hoopeston.
A New Technique for the Removal of Tonsils with Complete and Definite Hemostasis Following the Principles of General Surgery—O. M. Steffenson, Chicago.
Discussion—Edward F. Garraghan, Chicago.
Personal Experiences in Bronchoscopy and Esophagoscopy During the Past Year—Edwin McGinnis, Chicago.
Discussion—D. J. Evans, Aurora.
Tonsillar Diseases and Sterility in Women—André L. Stapler, Chicago.
Discussion—Henry R. Boettcher, Chicago.
Traumatic Abscess of the Nasal Septum in Children—C. F. Yerger, Chicago.
Discussion—A. B. Middleton, Pontiac.
The Intratracheal Injections of Oils—James E. Lebensohn, Chicago.
Discussion—Jacques Holinger, Chicago.

SECTION ON PUBLIC HEALTH AND HYGIENE

May 16, 1923—8:30 A. M.—County Court Room

The Next Step in Control of Tuberculosis—Grace Wightman, Chicago.
Discussion—J. H. Fulgham, East St. Louis.
Present Status of Venereal Disease Control—C. C. Pierce, Washington.
Discussion—Royal Tharp, East St. Louis.
Pneumonia, a Public Health Problem—W. A. Evans, Chicago.
Discussion—Herman N. Bundesen, Chicago.
Birth Registration in Illinois—I. D. Rawlings, Springfield.
Discussion—B. Hutcheson, Cairo.
Milk, a Health Problem in Illinois—John Dill Robertson, Chicago.
Discussion—W. H. Gilmore, Benton.
Status of Epidemic Encephalitis as an Infectious Disease—Peter Bassoe, Chicago.
Discussion—F. G. Norbury, Jacksonville.
Public Health Nursing in Illinois—Madge D. Reiseman, R. N., Springfield.
Discussion—H. A. Cables, East St. Louis.
Control of Diphtheria—R. V. Brokaw, Jacksonville.
Discussion—C. T. Roome, Evanston.
Rendering Luetics Non-infectious, a Public Health Problem—Joseph Welfeld, Chicago.
Discussion—I. H. Neece, Decatur.
Community Responsibility in Child Hygiene—H. O. Jones, Chicago.
Discussion—Elizabeth B. Ball, Quincy.
Value of Full-Time Health Officer—E. W. Weis, La Salle.
Discussion—H. N. Heflin, Kewanee.

SECRETARIES' CONFERENCE

Tuesday—May 15, 1923

Opening Address—President R. O. Hawthorne, Monticello.
Minutes of last meeting.
The Councilor—His Duty to State and County Societies—C. S. Nelson, Springfield.
Advertising—Geo. S. Bower, Galesburg.
State Medical Society and the Legislature—Senator Harry G. Wright, DeKalb.

EXHIBITORS

Exhibit Hall "A"

	No.
Abbott Laboratories, 4753 Ravenswood Ave., Chicago, Ill.	1
Wm. Meyer Company, 1644 48 N. Girard St., Chicago, Ill.	2
The Kolynos Company, New Haven, Conn.	3
DeVilbiss Mfg. Company, Toledo, Ohio	4
Horlicks Malted Milk Company, Racine, Wis.	5
Fellows Medical Mfg. Company, Inc., 26 Christopher St., N. Y.	6
John McIntosh Company, 30 E. Randolph St., Chicago, Ill. (Victor X-Ray)	7
Burnhan Soluble Iodine Company, Auburndale, Mass.	8
Mead Johnson & Company, Evansville, Ind.	9
Radium Company of Colorado, 853 Peoples Gas Bldg., Chicago	10
Huston Brothers, 30 E. Randolph St., Chicago, Ill.	11
Mellins Food Company, Boston, 9, Mass.	12
Wright Instrument Company, 58 E. Washington St., Chicago	13
Wright Instrument Company, 58 E. Washington St., Chicago	14
Wright Instrument Company, 58 E. Washington St., Chicago	15
G. H. Sherman, M. D., Detroit, Mich.	16
Ciba Company, Inc., Cedar and Washington Sts., New York	17

G. D. Searle & Company, 4617 Ravenswood Ave., Chicago, Ill. 18
A. S. Aloe Company, 513 Olive St., St. Louis, Mo. 19
Wilson Laboratories, 4221-25 S. Western Ave., Chicago, Ill. 20
Ambulatory Pneumatic Splint Company, 30 E. Randolph St., Chicago, Ill. 21
Pittman Moore Company, Indianapolis, Ind. 22
Childs Drug Company, 223-33 W. Erie St., Chicago, Ill. 23
The Medical Protective Company, Fort Wayne, Ind. 24
H. Masters, 5748 Bartmer Ave., St. Louis, Mo. (for W. B. Saunders Company) 25
Decatur Drug Company, Decatur, Ill. 26
Sharp & Smith, 65 E. Lake St., Chicago, Ill. 27
Sharp & Smith, 65 E. Lake St., Chicago, Ill. 28
C. H. Phillips Chemical Company, 128 Pearl St., New York 29
White-Haines Opt. Company, Springfield, Ill. 30
Radium Chemical Company, Forbes and Meyran Aves., Pittsburgh, Pa 31
Hanovia Chemical & Mfg. Company, Chestnut St., and N. J. R. R. Ave., Newark, N. J. 32

Exhibit Hall "B"

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SPECIAL NOTICES

Orlando Hotel is headquarters for the meeting.

All members are requested to register immediately upon arrival. The registration desk is located on the basement floor of the hotel, in Exhibit Hall "A."

Exhibit Hall "B" opens from the corridor off the lobby of the hotel, on the ground floor.

The by-laws of the society limit the papers of members to twenty minutes and remarks in discussion to five minutes, floor privilege being allowed only once for the discussion of any subject.

All papers read before the society or any of the Sections shall become its property. Each paper shall be deposited with the Secretary when read, and the presentation of a paper to the Illinois State Medical Society shall be considered tantamount to the assurance on the part of the writer that such paper has not already appeared and will not appear in medical print before it has been published in the Illinois Medical Journal.

The Scientific Committee has instructed section officers that a paper not heard in its scheduled turn shall be subject to the call of the chairman of the section at the end of that day's program if time permits. All discussions shall be confined strictly to the subject in hand.

No paper can appear in the Journal unless read in full or in abstract.

RUSSIAN PROPAGANDA AND U. S. MATERNITY LEGISLATION

It Is Difficult to Brush Away From the Children's Bureau the Shadow of Mme. Kollontai.

Jean Jacques Rousseau's tenet, "The parent should bear the child; the state should rear it," is the motto prescribed for the American home by the childless uplifters.

Again we quote, "There is nothing new under the sun." Rousseau lived and died in the period extending between the years 1712 and 1778. Unfortunately, his evil ways and questionable teachings were not all buried with him. These endure to inspire the Russian traitress, Mme. Kollontai, who in turn, by the Children's Bureau of the Department of Labor of the United States, was deemed a doctrinaire sufficiently meritorious to deserve a hearing through publication.

For this hearing of Mme. Kollontai's ideas, the taxpayers of the United States paid out hundreds of thousands of dollars. This was a vicious waste of taxpayers' money, unless the Children's Bureau wished to endorse the Kollontai ideas, and to inoculate with them the entire citizenry of the United States. Not until the true character of Mme. Kollontai was exposed ruthlessly to the general public, and it was realized that her teachings would quail under the moral scrutiny of a

Christian nation, did the Children's Bureau dodge the issue.

In the first place, who is this Mme. Kollontai? Her first name is Alexandra. Congressman Layton, commenting recently, remarked that "The Sheppard-Towner Maternity Act may be traced to the Children's Bureau, created in 1913, chiefly through the propaganda of Madame Kollontai, a Bolshevik, now enjoying the connubal bliss of an eighth husband."

According to the United States committee on Public Information, for whose publications no responsibility is assumed, Mme. Alexandra Kollontai is a Russian traitress. She was one of the Russian conspirators who were in league with Germany against the Allies.

She was concerned in the Russian peace propaganda and revolution a month before Lenin arrived in that country. She is the associate and compatriot of Lenin and the Russian Bolshevik—in fact, she was the first commissar of Lenin and Trotsky's department of health and welfare. Until the revolution broke she was the head of the Russian "Maternity system."

Of the Kollontai portfolio the ultimate of the ethics and economics is abolition of the marriage bond; the advocation of promiscuity as a relief from prostitution; the elimination of the badge of honor to children born in wedlock and the limitation of the population by birth control as a war prevention process; the feminists' plan of directly removing the legal discrimination of women by their refusal to bear children, save when, where and how they will; with ready relief for quick conception and libido, free and unconfined.

A disgusting and humiliating feature of the program, for the present in abeyance, although at first it had been included in the bill, is the proposed compulsory registration of pregnancy. No "Evidence of conception" such as is required by the U. S. Patent Office was incorporated into the bill, but at the outset it had been intended to legally require all women who see fit to respond to the call of motherhood, despite the teachings of "Hygiene of infancy, and the hygiene of pregnancy and related subjects, including non-technical subjects and other purposes through public health nurses and other suitable methods" provided for in Sections 3, 8, and 9 in the original Sheppard-Towner bill.

The Children's Bureau of the Department of Labor has issued and continues to issue many publications at the expense of the United States Government—financially speaking, the pockets of the taxpayers. Among other publications has appeared "Maternity Benefit Systems in Certain Foreign Countries." In almost every line this book is socialistic and bolshevistic. This book, issued by the Children's Bureau of the Department of Labor, gives unqualified endorsement to a socialistic book by this same Mme. Kollontai. (Please see Documents 1 and 7, issued by U. S. Bureau of Public Information, September, 1918.)

According to the quoted Russian idea, since "every child is the ward of the government; that parents are incapable of rearing their children; that motherhood and birth control shall be established by the law; and the child taken from its mother's care and turned over to public officers; that the State takes charge of the mother, and *pensions her, and being the supporter of the mother can assert the right to dictate her course of conduct;*" it would seem that women do not achieve the freedom of which the Russian doctrine makes them dream.

If children are needed for the state, the state can force the bearing of children, when and where it wills. This euphemistic debauching of women carries its own boomerang. Why attempt to inflict flotsam Russian theories upon the American home?

The work of Mme. Kollontai's department, in taking children away from their parents and herding them together in the "care" of the soviet government, has had such disastrous results, notably with little girls, that it has been characterized by a distinguished Russian, Professor Boris Sokoloff, *as a crime which knows no parallel in the history of the world.* They have destroyed morally as well as physically a whole Russian generation. Sir Paul Dukes says, that the central tragedy of Russia today is the results of Bolshevist corruption of children under Madam Kollontai's "welfare" and "maternity" system.

The weight of Prof. Sokoloff's condemnation may be appreciated by remembering that he was a leading member of the socialist party, a revolutionist, and one of the members of the first All-Russian Constituent Assembly and, writing in the Volia Russii, February 16, 1921, states:

I am prepared to forgive the bolsheviki many things, almost everything; but one thing there is which I can

not and will not forgive them, namely, those experiments, positively criminal and worthy of the most savage tribes of the African jungle, which the bolsheviki have been making all this time with our young generation, with our children! This crime knows no parallel in the history of the world. They have destroyed morally as well as physically a whole Russian generation.

Proceeding, Prof. Sokoloff quotes the official journal of the Commissariat of Public Education, No. 4, as containing the following statement by the bolshevist commissary, Lelina:

We must nationalize the children. We must remove the children from the pernicious influence of the family. We must register the children; or—let us spreak plainly—we must nationalize them. Thus they will from the very start remain under the beneficial influence of communist kindergartens and schools. Here they will grow up to be real communists. To compel the mother to surrender her child to us, to the soviet State, that is the practical task before us.

Returning for the moment to the topic of the book published at the expense of the taxpayers and through the Children's Bureau and called "Maternity Benefit Systems in Certain Foreign Countries," it must not be forgotten that this volume was the work of Henry J. Harris, United States Department of Labor, Children's Bureau. This book received an exhaustive examination by Senator James H. Reed of Missouri. His description of this book made in a speech before the Senate of the United States was:

The book exploits various schemes adopted in European countries, including Russia. The introduction by Mr. Harris is in fact an artfully contrived argument in justification of these systems, extending them to the United States and in making them compulsory. It is not necessary to quote what Mr. Harris says, because almost his exact language is reproduced and specifically indorsed by Miss Julia Lathrop, the head of the Children's Bureau, who is to administer the present bill. She states in her letter of transmittal, page 9:

"Maternity systems are not an experiment. * * * Germany, Austria, and Hungary early established such systems, and Denmark, Norway, Rumania, Russia, Serbia, Sweden, and Switzerland have also provided maternity benefits. * * * They vary from systems under which every woman, regardless of her financial status, receives a fixed sum on the birth of a child to systems of voluntary insurance. * * * No such system, once undertaken, has ever been abandoned. Instead the tendency of changes in existing legislation has always beeen toward including larger and larger groups of the population, toward increased benefits, and toward the compulsory as contrasted with the voluntary principle of insurance. * * *

"Dr. Harris, who was especially qualified for the task by his wide knowledge of European wage legislation, was asked to summarize (European legislation) in the hope that the information might prove useful to the people of one of the few great countries which as yet has no system of State or national assistance in maternity—the United States.

"Observe the language:

"'No such system, once undertaken, has ever been abandoned.'

"That, of course, includes Russia and the Russian System. The other language I have quoted is, in fact, an indorsement of these European systems. The book was sent out—I quote—

"'In the hope that the information may prove useful to the people of * * * the United States.'

"It is particularly to be noticed both Dr. Harris in his book and Miss Lathrop in her letter of transmittal not only substantially indorse the European systems but approve the trend toward making them compulsory. No fair man can read this literature without understanding from it that the head of the Children's Bureau believes that it is the right of the State to assume charge of women before, during, and after confinement and of the baby as soon as born, and to employ whatever force is necessary. In propagation of that doctrine this book is distributed for the instruction of the American people, one of its illuminating chapters being a dissertation upon the Russian system."

In order to remove any dubious impression that this book was not endorsed by Miss Julia Lathrop and the Children's Bureau, of which at that time Miss Lathrop was head, there occurred this exchange of question and answer:

Senator Kenyon: Does the Senator mean that what he has read is Miss Lathrop's comment?

Senator Reed: Yes; Julia C. Lathrop.

Senator Kenyon: I merely wanted to be clear about that.

Senator Reed: I have just read from the letter of transmittal written by Miss Lathrop. For the benefit of the Senator I will read it again:

"No such system, once undertaken, has ever been abandoned. Instead, the tendency of changes in existing legislation has always been toward including larger and larger groups of the population, toward increased benefits, and toward the compulsory as contrasted with the voluntary principle of insurance.

"Meanwhile a considerable body of experience has accumulated as to methods of administration, cost, and other details of operation of the different systems. This experience Dr. Harris, who was especially qualified from the past by his wide knowledge of the European labor legislation, was asked to summarize, in the hope that the information might prove useful to the people of one of the few great countries which as yet been no system of State or National assistance in maternity—the United States.

"Respectfully submitted,

"Julia C. Lathrop, Chief."

"Hon. W. R. Wilson,

"Secretary of Labor."

That, sir, is an unqualified indorsement of the maternity benefits and birth regulation systems of

Europe. It can not be fairly construed otherwise. The book is printed at the expense of the Government of the United States in order that the benefit of this knowledge may be distributed to the benighted denizens of our land.

BIRTH CONTROLLISTS AND MATERNITY LEGISLATION

(Reprinted by request.)

Mr. Norman Hapgood, in the Hearst papers, September 22, 1921, charges the opponents of the Sheppard-Towner Bill with "unfairness" in mentioning "birth control" in connection therewith. He says, misquoting, that Miss Robertson "declares it provides for birth control," and after asserting, "I assume she has not looked at the bill," Mr. Hapgood makes this remarkable reply:

"The matter was intentionally left out of the bill because with some people it is a matter of religious faith."

In other words, after misquoting Miss Robertson, and unjustly assuming that she had not looked at the bill (when she printed the full text in the first part of her speech), Mr. Hapgood feebly pretends that absence of direct provision for "birth control" in the bill is a complete answer to the charge that it would tend to promote, or is secretly designed in part to further, the "birth control" cult.

Of course, neither Miss Robertson nor anybody else has said the Bill "provides" for "birth control" openly; and now comes Mr. Hapgood with the naive explanation that it was "intentionally left out" to catch Catholic votes! But, as numerous non-Catholics have pointed out, the "related subjects" clause in the original bill (also "intentionally left out" by the Senate Committee after "birth control" argument by opponents), and the "other suitable methods" now in the bill, can mean anything, including "birth control," that the head of the system considers related to "the hygiene of maternity and infancy."

There are two "birth control" organizations, with interlocking directorates, known as the "Birth Control League" and "The Voluntary Parenthood League." Both organizations issue lists of endorsers and patrons. The list of alleged endorsers issued by the Voluntary Parenthood League includes:

Six members of the Sheppard-Towner Emergency Committee, to wit:

Rev. Percy Stickney Grant, Dr. Stephen Wise, Mrs. Julius Rosenwald, Prof. Irving Fisher, Miriam F. Scott, Ernest Poole.

Why does the Voluntary Parenthood League have six representatives on the Sheppard-Towner "Emergency" Committee?

But the Voluntary Parenthood list includes other interesting persons:

Norman Hapgood, who protests against the "unfairness" of exposing a thing that was "intentionally left out."

Miss Jeanette Rankin, original introducer of the Maternity bill.

Dr. Ellen C. Potter, star witness for the Sheppard-Towner bill at two recent hearings; also head of the Pennsylvania Child Hygiene department.

Miss Lilliam D. Wald, original proponent of the Children's Bureau, who has been writing letters to the papers since February in favor of the Sheppard-Towner bill.

Dr. Valeria C. Parker, star witness for the Sheppard-Towner bill before the Senate Committee, and chairman of the "social hygiene" committee of the National League of Women Voters, of which she is also a member of the Executive Council.

Elsie Clews Parsons, author of the "early trial marriage" theory, whose husband introduced the first Children's Bureau bill in Congress.

Owen Lovejoy, a member of the famous Children's Bureau conference to draw up "minimum standards" of child welfare.

Judge Ben Lindsey, one of the chief original supporters of the Children's Bureau.

Mrs. Stanley McCormick, First Vice-President National American Woman Suffrage Association.

Mrs. Harriet Stanton Blatch, daughter of Elizabeth Cady Stanton, and a leader of the National Woman's Party drive for "pay for mothers."

This will be sufficient, for the moment, to indicate whether it is "unfair" to ask why so many "birth control" advocates are on the Sheppard-Towner "Emergency" Committee and otherwise identified with the chief organizations in favor of the Maternity Bill. There are a great number of other persons "interlocked" with "birth control" and the "baby bill" to which space cannot now be devoted.

The Voluntary Parenthood League is making a great "drive" on Postmaster Hays to have

"birth control" removed from the prohibitions of the postal laws. The Birth Control League is arranging a great "conference" in New York for November. Why is there so much coincident "emergency" in the matter of "birth control" and the Maternity bill that birth control advocates hold at least six places on the Sheppard-Towner Emergency Committee?

NEW YORK LEGISLATURE REJECTS SHEPPARD-TOWNER MATERNITY BILL

The Sheppard-Towner Bill was killed for this session by the New York State Legislature. During this session just ending two determined efforts have been made to pass it, salved up by joker phraseology calculated to make New York assembly men believe that the bill stood for something it does not. New York uplifters fell down hard for which the State at large may feel more than grateful. It will behoove Illinois in this instance to follow the example of the New York Legislature.

CHIROPRACTIC BESTED IN WISCONSIN COURTS.

Chiropractors have received a setback in Wisconsin. During the January, 1923, term of the Wisconsin Supreme Court, in the case of Herman F. Kuechler, Appellant, vs. Frank C. Volgmann, Respondent, the supreme judiciary upheld the action for malpractice upon the part of the chiropractor. Grounds for the decision were set forth as "Any person practicing medicine, surgery, osteopathy, or any form or system of treating the afflicted without having a license or a certificate of registration authorizing him so to do, shall not be exempted from but shall be liable to all the penalties and liabilities for malpractice; and ignorance to diagnose as well as to treat the disease. Diagnosis is ordinarily assumed and performed by licensed medical or osteopathic physicians. But it may be assumed by others, and it is held that the practice of chiropractic is the practice of medicine.

Commonwealth v. Zimmerman, 221 Mass. 184; State v. Barnes, — S. C. —; 112 S. E. 62. And the fact that chiropractors abstain from the use of words like *diagnosis, treatment* or *disease* is immaterial. What they hold themselves out to do and what they do is to treat disease, and the substitution of words like *analysis, palpation* and *adjustment* does not change the nature of their act. Commonwealth v. Zimmerman, 221 Mass. 184, and cases cited on page 189. Hence when the defendant assumes to perform that duty he must exercise the care and skill in so doing that is usually exercised by a recognized school of the medical profession. Nelson v. Harrington, 72 Wis. 591. This the complaint alleges he failed to do and the demurrer admits the allegation. For these reasons we reach the conclusion that the trial court erred in sustaining the demurrer.

By the Court.—Order reversed and cause remanded with directions to overrule the demurrer and for further proceedings according to law.

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F. H. Steinhoff
H. J. Smejkal
Chas. L. Schmidt
F. E. Simpson
A. M. Shaw
Elmer E. Simpson
Chas. A. Stevens
A. W. Stilllans
L. Ernest Schwarz
C. K. Stulik
M. J. Selfert
Hugh R. Schofield
Bertram W. Sippy
C. Pruyn Stringfield
F. S. Selby
R. C. Steffen
Samuel Stein
Charles E. Sceleth
A. E. Stewart
Samuel Salinger
F. H. Schroeder
A. W. Seidel
B. D. Satek
H. Schmitz
A. F. Stevenson
C. E. Stanbury
I. Trostler
E. D. Tallman
F. P. Thompson
E. E. Tansey
John W. Tope
John J. Theobald
G. D. Theobald
H. M. Thometz
Frank F. Trombly
W. M. Thomas
Geo. F. Thompson
Max Thorek
L. L. Turner
H. Tetrev
F. D. Vreeland
W. VanHook
B. L. Vilna
Walter Verity
R. Von der Heydt
S. A. Waterman
D. H. Wherritt
S. S. Winner
S. L. Weber
Joseph A. Waska
Will Walter
J. H. Walsh
E. W. Westland
John A. Wesener
Charles Windmueller
H. L. Wallin
H. A. Ware
B. E. Walpert
M. S. Wlen
J. T. Woof
Theo. B. Wood
G. V. Wyland
S. H. Waterman
T. G. Wallin
Geo. W. Webster
A. A. Whamond
H. Woehlk
E. Weber
C. J. Whalen
K. N. Wakeberg
F. F. Wisniewskl
T. M. Wlersen
T. J. Williams
H. J. Way
C. F. Yerger
A. Yuska
T. Z. Xelowskl
H. Zaczeck
O. Zealezny
Lucius H. Zeuch
Joseph Zabokrtsky

The proposed campaign cannot be prosecuted without funds; it must be supported by popular subscription. It is hoped that every doctor will subscribe to this worthy cause. Serious disease diverted from the incompetent will result in the saving of thousands of lives and will prevent much permanent invalidism.

This campaign will achieve two great objectives: A gradual, but ultimate restoration of the medical profession to its merited place in the public sympathy and confidence and the inestimable benefits to humanity through the consequent prevention of disease and the preservation of life.

For the convenience of those who have mislaid their letter of Appeal from the State Society, we hereby reproduce the pledge card:

Please sign and mail to the Illinois State Medical Society.

To the Officers of the Illinois State Medical Society and Members of the Council:

"I am in accord with the proposed newspaper educational campaign in the press of Illinois, unanimously adopted by the House of Delegates of the State Society at the 1922 meeting of the plan recommended by the Council of the Society, and as evidence of my desire to co-operate with the Officers of the Council and of the State Society, I hereby enclose my check for $..... to aid in defraying the expenses thereof:

Make Checks Payable to the Illinois State Medical Society.

Name.....M. D.

Street .....

City .....County .....

"Sign the above pledge card, make out a check payable to the Illinois State Medical Society and mail both in an envelope as follows:

From .....

ILLINOIS STATE MEDICAL SOCIETY,
c/o Cashier, Sheridan Trust & Savings Bank,
4738 Broadway,
Chicago, Illinois."

Lay Publicity Committee, 25 E. Washington St.

NOTICE OF EXAMINATION FOR ENTRANCE INTO THE REGULAR CORPS OF THE UNITED STATES PUBLIC HEALTH SERVICE.

Examinations of candidates for entrance into the Regular Corps of the U. S. Public Health Service will be held at the following named places on the dates specified:

At Washington, D. C.....July 9, 1923
At Chicago, Illinois.....July 9, 1923
At San Francisco, Cal. .....July 9, 1923

Candidates must be not less than twenty-three nor more than thirty-two years of age, and they must have been graduated in medicine at some reputable medical college, and have had one year's hospital experience or two years' professional practice. They must pass satisfactorily, oral, written, and clinical tests before a board of medical officers and undergo a physical examination.

Successful candidates will be recommended for appointment by the President with the advice and consent of the Senate.

Requests for information or permission to take this examination should be addressed to the Surgeon General, U. S. Public Health Service, Washington, D. C.

H. S. CUMMING, Surgeon General.

WISCONSIN HEALTH DEPARTMENT IS UNDER WASHINGTON DICTATION

The maladroit pretense of the Sheppard-Towner Act reveals itself unconsciously wherever its workings are brought into the broad light of day. The following excerpts from correspondence showing what is happening in the state of Wisconsin call for small comment.

If the Sheppard-Towner Act came out in its true colors it would have to sign up as a law to make a great many jobs at increased taxes for professional politicians and their followers who delight in meddling in other people's business and who feign to teach what they do not know. Under date of January 10, 1923, there was sent to physicians in the state of Wisconsin a communication upon the letterhead of

"Wisconsin State Board of Health
and
United States Department of Labor, Children's Bureau, Co-operating for the Promotion of the Welfare and Hygiene of Maternity and Infancy Bureau of Child Welfare and Public Health Nursing, State Capitol Annex, Madison."

This letter was signed "Very truly yours, C. A. Harper, M. D., State Health Officer, by Mrs. Mary P. Morgan, Director, Special Agent, U. S. Children's Bureau."

The context of this communication runs:

"In accordance with the general movement on foot to promote the welfare and hygiene of maternity and infancy we are preparing to issue monthly prenatal letters to expectant mothers whose names are sent to us. *Many of the public health workers and some of the physicians* throughout the state are sending us the names of their prenatal cases with the request that these letters be sent to them. We have not been prepared until now to offer this service to all physicians in the state.

"I am enclosing a set of the letters which we are using now but which may be slightly revised and will be grateful for your suggestions regarding them if you care to have them sent to your patients, the names may be reported on the enclosed blanks. More blanks will be forwarded to you on request. With best wishes, I remain,"

From this same bureau was sent out on January 29, 1923, a digest of the Sheppard-Towner Act and a letter called "The Passing of the Midwife."

Treating each item separately it is to be noted that this "Digest" sent out presumably to busy physicians unfamiliar with the working terms of the Sheppard-Towner Act exposes frankly a few of the weaknesses complained of by its objectors:

DIGEST OF SHEPPARD-TOWNER ACT

(A Federal Act.)

"For the Promotion of the Welfare and Hygiene of Maternity and Infancy."

Sec. 1 & 2. Mayes appropriation of $1,240,000 annually for five years—

(Wisconsin may have $5,000.00 as a gift outright and $22,751.62 if matched by state funds)

Sec. 3. Creates a Federal Board of Maternity and Infant Hygiene, composed of the Surgeon General of the United States Public Health Service, the Chief of the Children's Bureau and the United States Commissioner of Education.

The Children's Bureau of the Department of Labor is charged with the administration of the Act and the Chief of the Bureau is made the Executive Officer. (Dr. Anna Rude has been appointed Director of Maternal and Infant Hygiene.)

Sec. 4. The State Board of Health, through the Bureau of Child Welfare or Hygiene, shall administer the provisions of the Act.

Sec. 5 & 6. *Provide clerical service and expenses for Federal Children's Bureau.*

Sec. 7. Money to be certified to treasurers of the various states.

Sec. 8. Plans for work in each State to be made by the State Agency and approved by Federal Board.

(Plans for Wisconsin have been approved.)

Sec. 9. No agent officially employed in carrying out the provisions of this act shall enter any home or take charge of any child over the objection of parents or guardian.

Sec. 10. Certificate showing that States are entitled to Federal money will authorize Secretary of Treasury to make payment to state.

Sec. 11. State Board of Health shall make requested reports to Children's Bureau.

Sec. 12. *No portion of money shall be used for "the*

purchase, erection, preservation, or repair of buildings" or "purchase or rental of buildings or lands—nor shall any of this money be used for the payment of any maternity or infancy pension, stipend or gratuity."

Sec. 13. Children's Bureau reports to Congress.

Sec. 14. "This Act shall be construed as intending to secure to the various States control of the administration of this Act within their respective States, subject only to the provisions and purposes of this Act."

Attention is called especially to sections five and six and twelve.

Here is plain proof and open face evidence that the Sheppard-Towner Act never intended to provide for food, shelter, clothing or nursing or medical care for mother or child, but that the Sheppard-Towner Act planned from the first to create an enormous political machine. It provides only for talk and taxes, of which we have had too much since the war.

This "Digest" was accompanied by a letter, "The Passing of the Midwife." A careful reading of this letter will explain the reason for the reply made thereto by a prominent Wisconsin physician to whom it came in the routine course of circularization. The letter read:

THE PASSING OF THE MIDWIFE

January 29, 1923.

Dear Doctor: In 1921 there were 62,163 live babies born in Wisconsin. Of this number 56,404 were attended by physicians, 4,182 by midwives and 1,577 by others. About 15 years ago the midwives took care of between one-quarter and one-third of the confinement cases. This change of condition undoubtedly is an important factor in the fact that Wisconsin in 1920 had the lowest maternity death rate of any state in the registration area. There were *31,666 males, 30,424 females, 924 twins, 15 triplets and 979 illegitimates.* Of twins, 462 males, 459 females. Of triplets, 5 males and 10 females. Still births, 1,663. In 1920 there were 338 maternity deaths. More than half of these were due to toxaemia. These latter deaths could be largely prevented if expectant mothers would consult physicians early and follow the instructions.

It is the purpose of the State Board of Health to increase its educational program along these lines with a hope that eventually every expectant mother will be under careful medical care from the early stages of pregnancy through the confinement.

The health centers established under the Sheppard-Towner Act are for the purpose of educating the citizenship of this state and particularly expectant mothers in the fact that prenatal care is essential in all cases in order to safeguard their lives to the fullest extent at the time of confinement. The physicians in health centers will make examinations of expectant mothers but offer no treatment. Advice is given in all cases that the family physician should be consulted and his directions carried out. A copy of the examination by the physicians in the health centers will be sent to the individual's family physician in all cases. Please give each case of pregnancy most careful attention. With this object in view it is certainly possible to not only cut the maternity death rate in half but also have all expectant mothers in a healthy condition at the time of confinement which will better enable them to take care of their offspring and at the same time as result of this close medical attention more vigorous babies will be born. We are earnestly seeking the cooperation of the physicians to carry out the educational program along these lines.

A digest of the Sheppard-Towner Act is enclosed.

Very truly yours,

C. A. Harper,
State Health Officer.

"What is 'maternity death'?" was the initial comment made by this second physician, who on March 10, 1923, wrote to Dr. Harper, saying:

Milwaukee, March 10, 1923.

To Dr. C. A. Harper,
Public Health Officer,
Madison, Wis.

My Dear Dr. Harper:

I am in receipt of a letter, signed by you, but which I cannot believe was ever written or dictated by you. It is herewith enclosed.

Will you be good enough to inform me where I may become possessed of literature that will give me information as to the sexual anatomical conformation of "illegitimates?" What was the sex and other peculiarities of the other three twins? Do you mean 1920 or 1921? As to "factor" and "fact": it is at least not a musical phrase.

What is the use of having two physicians examine the poor thing who has become pregnant? The one at the "Health Center," where the second Doctor has his office, ought to be enough.

Why the intercallation of the "DOC" at the first one? Is it only that there may be another salaried official to have his finger in the pie—or elsewhere? Why in the name of the Holy Nazarene, must there be all this fingering of our pregnant citizenesses?

How many of the 338 deaths at confinement were due to deformed pelves? How many to deformity of the child? How many to asthenia, intercurrent disease, syphilis, early efforts at self-induced abortion, etc.?

How is pre-parturient treatment of the insane, the endocrinic perverts or divergents, the syphilitics, the thymus-residuals, the haemophyllics, the diabetics, the renal-insufficients, etc., to "put *all* expectant mothers in a healthy condition at the time of confinement"?

And: Oh, God of our Fathers! Where do you get the idea that the Federal Government GIVES the State a single cent?

It only returns a small part of what the State has already paid to it, and then assesses the State another $22,751.62, which the State has already paid, so that it—The Federal Government—may return it again.

Oh, Fatuous Imbecility!

The time is not far distant when the State and Federal Governments will take over the supervision of the function of defecation in its citizenry. But why

should I care? I shall be dead at that time. Thank God!

Yours in the doubtful hope of a change toward sanity in this generation of fat-thighed men and skinny-hipped women.

Partisans of the Sheppard-Towner Act will please note that Washington is right on the job in Wisconsin. The representative official of the taxpayers of Wisconsin is sidestepped and the running of the machinery is delegated to "Mrs. Mary Morgan," the representative of the Children's Bureau at Washington. This is exactly in line with the continuous contentions of the opponents to the Sheppard-Towner Act. We repeat what we have said before, that if the Sheppard-Towner Act is universally accepted the operation of the machine will be politically owned, controlled and mismanaged. The only "welfare" to profit will be that of the payroll brigade, of the uplift crusaders.

Another "straw" showing Washington dictation is the method of documentary signature. Dr. Harper's name is there—superficially, being typewritten like the context of the letter. The real signature, done in a facsimile handwriting stamp, is that of "Mrs. Mary P. Morgan, Director, Special Agent, U. S. Children's Bureau."

PHYSICIANS' OFFICES AS "HEALTH CENTERS"

(*The following resolution passed by the House of Delegates of the Medical Society of the State of California at the Fifty-First Annual Session,* 1922.)

Whereas, It always has been and is the primary purpose of physicians to give trained, scientific, sympathetic service to all of their fellow citizens who need medical advice and to furnish this service to all alike, regardless of the social or financial standing of the patient, and

Whereas, It never has been and is not now necessary to interpose any agency not under the direct supervision and control of competent members of the medical profession, members are reminded of the dangers of cooperation in agencies where such supervision and control does not exist, and

Whereas, In order to re-emphasize these policies and practices to all citizens of California, and to counteract the influence going about the state to the effect that consideration by physicians for those needing medical advice can be obtained only by applying to some non-medical organization, and in order thta the public may be fully informed and free to call directly upon the physician of its choice with the assurance of sympathetic and confidential consideration, therefore, be it

Resolved, By the Medical Society of the State of California and representatives of all county and other constituent organizations, in convention assembled, that the office of each of its 4,000 members throughout the state is a "Health Center" of the kind that means the best medicine and public health advice that physicians can give; this upon the basis that those who can pay in full should do so, those who can pay part should do so, and those who are unable to pay should have the service without cost.

Resolved, That in order to secure special financial consideration, the patient is requested to execute and sign a paper showing his socio-financial status and setting forth briefly the reasons why he must ask for special financial consideration, this being the policy now being followed by clinics and welfare organizations of all sorts.

The following note also formed a part of the resolution.

The State Society will supply each of its members with appropriate blank forms for this purpose, and will furnish one to any citizen who desires to use it. One of these forms presented to any member of the State Society in any part of the State will insure the courtesies and special consideration that his condition warrants and, in addition, he will receive the same sympathetic, confidential, constructive help that is given to the person who is able to pay fully for all that he requires. In carrying out this program, physicians reserve the right, when they think wise, to check up on the accuracy of the applicant's statements in an unobtrusive and sympathetic manner, in exactly the same way as those reports are now being checked up by clinics and other welfare organizations. Members also reserve the right to refer applicants for special consideration to other physicians under the same conditions and for the same reasons that they would refer patients paying regular fees. Any sick person in any part of the State of California who fails, for any reason, to secure adequate medical attention is requested to communicate with the secretary of the State Medical Society, 1016 Balboa Building, San Francisco.

In the November issue of the *California State Journal of Medicine* the following editorial comment appears:

It is the general impression among physicians, and the resolution itself so states, that it is a re-emphasis of the practice and policies of physicians everywhere at all times.

The blank form referred to in this resolution has been prepared and is now being considered by the Council for publication. It will be ready to distribute to members who desire to use it very shortly. Many already have requested this form and further information as to how they may make their activities conform with the spirit of the resolution.

There are two outstanding features of this resolution, the most important being that physicians are ready to render service to any person requiring professional care; that those who are able to pay the physicians' regular fees for this service should do so, those who are able to pay part should do so, and those who are unable to pay any of the fee should have the service just the same; all services, regardless of the status of the patient, to be rendered in the same high grade, confidential, sympathetic manner. The other important feature in the resolution is that it

never has been, and is not now, necessary to interpose any agency not under the direct supervision and control of competent members of the medical profession between the physician and his patients.

It has been said by some that, if the spirit of this resolution were applied, physicians would not be able to give adequate care to all of the ambulatory sick in this State, particularly in certain congested centers. The facts are, that members of the medical profession *now* take care of all of the ambulatory sick, as well as those who are bed-ridden and require more time, and furthermore the problem in the aggregate is not as large as some people seem to think. If all the sick people in the State of California, of whatever class, kind and condition, were divided up equally among the seven thousand educated physicians practicing in this State, they would have less than twenty sick people each to look after. If the ambulatory patients were so divided, the doctors' offices of this State would average less than ten visits per office per day.

The primary consideration in the carrying out of this or any other resolution or policy of the medical profession is, that the sick people, regardless of class of sickness, their place of residence or any other consideration, should have adequate medical care. This medical care should be available to all ambulatory patients in physicians' offices and to all others in their homes, hospitals or wherever else they may be. The resolution of the State Society is an effort to make these facilities available in a practical manner.

Correspondence

April 13, 1923

To the Editor:

In the March number of the Illinois Medical Journal, several articles are printed in the Editorial Section voicing objections to the Sheppard-Towner Federal Act "for the promotion of the welfare and hygiene of maternity and infancy," and giving reasons why Illinois should not accept the provisions of this Act. The Journal has frequently printed articles of this character voicing these same objections, and has never presented adequately, if at all, the arguments *in favor* of the Sheppard-Towner Act.

It seems wise, therefore, at the present moment, when the subject is no longer a matter of academic argument, but a vital pressing question in Illinois, to present the positive constructive side of this Federal Act, so that the question may be impartially judged by our Legislators and the people generally.

It is unfortunate that in placing the question before its readers, the Journal instead of printing the Federal Act as it *was passed* by Congress, November, 1921, prints instead the Bill as it passed the Senate in July of that year. The Journal then refers to amendments made in the Act before its passage. This presentation of the case makes it difficult for any reader to get a correct impression of the Bill as it now exists on the statute books and to form his opinions on its actual provisions and not on some one's interpretation of them. If it was the intention to cloud the issue, this method would be effective, but one could hardly ascribe such motives to a scientific journal.

A word as to the history of this Federal Act might be illuminating in view of the public statement of an Illinois physician that it was "conceived in iniquity and born in sin." It certainly had no such insuspicious beginning! This Bill was drawn as a result of the publication of figures compiled by the U. S. Children's Bureau after painstaking investigations. The figures indicated the high death rate of mothers and infants in this country. It was shown that many foreign nations have much lower death rates for these groups than prevail in the United States. The corollary was also shown that in foreign countries and in the United States wherever an educational service in maternal and infant hygiene was maintained, wherever Child Welfare Centers or Infant Welfare Stations were opened, a lowering of the death rate among mothers and babies automatically followed. With such facts at hand and with the knowledge that nothing is so important to the nation, both economically and humanly, as saving the lives of its children and promoting the health and welfare of its citizens, the Sheppard-Towner Bill was drawn to make available in every section of our country an educational service that was being given by public and private agencies in some favored localities. The Bill was drawn with the best legal and medical advice obtainable and has been supported enthusiastically by public health officials, leading pediatricians, and physicians in general practice, by social workers, and by all the great national organizations of women and all unorganized women generally throughout the whole country. The Bill had the benefit of years of discussion, was amended to make it entirely satisfactory to certain groups which found objection to some of its original provisions, and became a law in November, 1921.

The figures on which the need for the Sheppard-Towner Act was based, and which placed the United States much below other nations in safe-guarding the lives of mothers and babies, have been challenged by some opponents of the Bill but never disproved. The birth and death statistics in the leading foreign countries are based on the necessity for military service and are, therefore, liable to be most accurate. Moreover, all our reports of world trade and of international affairs are based on similar reports of foreign nations. Why should we suppose that their records of births and deaths of mothers and babies should alone be inaccurate? One leading obstetrician of Chicago who objected to finding the United States seventeenth down the list in the death rate of mothers as constituting a reflection on his branch of the profession, still conceded that the maternal death rate in the United States was *twice that it ought to be!*

It has also been objected that the statistics of 1919 should not have been used owing to the deaths from influenza, but the fact remains that the death rate of mothers for the United States birth registration area was 20 per cent. higher than the next highest rate, and was 200 per cent. higher than several other nations, so that its place among the nations would not be materially different even if other years were taken. It is, moreover, true and confessed openly by leading physicians in this country that the maternal death rate is not falling, and it is evident that if we do not adopt different methods, we shall soon be nineteenth down the list instead of seventeenth.

In drawing the Sheppard-Towner Bill the form of Federal Aid to the States was chosen, first, because it has proved an excellent method of stimulating state and local action; second, because the lives and welfare of mothers and babies are a matter of vital importance to the nation as a whole, far transcending state limits; and third, because the system of Federal Aid to the States has been well tested and proved successful for promoting education in agriculture and mechanical arts (through Federal Aid to Land Grant colleges under the Morrill Act), in stimulating vocational education and rehabilitation of handicapped persons (Smith-Hughes Act), in giving aid to the farmer through the development of new methods of land cultivation and stock raising, and to his wife through the service of Home Demonstration Agents in promoting home economics (Smith-Lever Act, and for the extension of good roads throughout the country (Good Roads Act). With such a history of successful development under Federal Aid, why should the method not be used for saving the lives of mothers and babies through an educational service in which the State and Federal Governments should join?

The Sheppard-Towner Act is the best and soundest Federal Aid Act ever drawn as it has benefited by the experience with all the previous Acts of this character.

Specific Objections: The ILLINOIS MEDICAL JOURNAL (page 173, first paragraph), declares that even with the amendments made to the Sheppard-Towner Act before its passage "The States must still adopt such child welfare plans as the Federal authority may approve."

Reply: The Sheppard-Towner Act carefully guards state initative in requiring specifically:

That the Division of Child Hygiene in the *Department of Health* of *each state* shall prepare its *own* "detailed plans for carrying out the provisions of the Act within such state. If these plans shall be in conformity with the provisions of this Act and reasonably appropriate and adequate they *shall be* approved by the Federal Board." The Federal Board itself has *no power* to make plans for the states.

Moreover, the Act has been in operation in a number of states since its passage. Each state has made its *own* plans. They have all been approved by the Federal Board and *no two are alike.*

Objection: The Journal also states (p. 173, first paragraph) that the "Central Government will control through the most sinister and abused of all controlling powers—the power to give or withhold money."

Reply: There will be *no* Federal dictation, under express terms of the Act.

"The administration of the Act is in the hands of a Board of Maternity and Infant Hygiene, which consists of the Chief of the Children's Bureau (a woman), the Surgeon-General of the United States Public Health Service (a man), and the U. S. Commissioner of Education (a man).

This Board *can not* withhold money from a state unless it can be shown that a state has not "properly expended its money."

(Quoted from the act.) "If so withheld, a state may appeal to the President of the United States, who may either affirm or reverse the action of the Board; provided that before any such certificates shall be withheld from any state, the Chairman of the Board shall give notice in writing to the authority designated to represent the state, stating specifically

wherein said state shall have failed to comply with the provisions of this Act."

Objection: The Journal further states (p. 173, paragraph 2), "Nothing material is given to needy mothers or children. No Maternity Hospital can be built anywhere with any part of the funds. A physician attending a destitute mother could not use five cents of the fund for medicine. Not a bed for a single mother or a bottle for a single baby is provided."

Reply: Rightly enough the Sheppard-Towner Act does not give material aid to the needy. Each state and each locality is charged by law to care for its poor and sick and it would indeed be "pauperizing" to have the Federal Government step in to a purely local situation which is already adequately provided for. Had the Sheppard-Towner Act given material relief from the Federal Government it might readily be called a "socialistic" measure, which it most decidedly is not.

Objection: The Journal states (p. 173, paragraph 3), "The Federal Government has no more right to collect money from New York, Illinois and Massachusetts and divide it among Montana, Wyoming and New Mexico than it has the right to take money from Jones and give it to Smith."

Reply: The absurdity of this statement is self-evident. According to this argument all money from Federal taxation would have to be spent in the state from which it was received and for the exact amount which was collected. All Federal taxation *is* based on "taking from Jones and giving to Smith," provided the aims and purposes of the whole government and the nation are thereby served. Certain rich states (Illinois among them) contribute the bulk of Federal taxes, which is just and fair as these industrial states make their money from the sale of their products among all the other states. There is no more reason why Federal funds should not be spent in *all* the states for saving the lives of mothers and babies than for improving the condition of hogs and cattle, building bridges, light-houses, harbors, ships, providing farm loans and Federal Banks, and every other activity of the Federal Government which benefits all of the people no matter where the individual expenditure may be made.

Objection: The Journal states (p. 173 paragraph 4), "So-called 'Federal Aid' as in this bill is not the same as in the Good Roads Bill. The Constitution gives Congress power over Interstate Commerce, transportation and post roads. . . . Likewise the vocation educational bill for soldiers is different. The Constitution gives Congress power to raise and support armies, and the duty of caring for the 'Nation's defender, his widow and orphans,' as Lincoln said."

Reply: There is one important omission in this statement. The same Federal Constitution that gives Congress power over interstate commerce and post roads, to raise and support armies, etc., gives it also power to legislate for the promotion of the "general welfare" of all of the people. Federal Constitution, Article I, Sec. VIII, Clause I, "The Congress shall have power—To lay and collect taxes, duties, imposts and excises, to pay the debts and provide for the common defense and *general welfare* of the United States, but all duties, imposts and excises shall be uniform throughout the United States."

Under this clase, Federal subsidies for agricultural and vocational education, the U. S. Public Health Service, Department of Labor, Children's Bureau, and all other welfare activities of the Federal Government are justified.

Objection: The Journal concludes in paragraph 4, p. 173, "The present proposed plan (Sheppard-Towner) is morally the same as *corruption and bribery,* whatever jugglery and excuses may be offered."

Reply: There is no more "corruption and bribery" in the Sheppard-Towner Act than in every Federal Aid measure and the amount of appropriation for this measure is infinitesimal compared with the others. One wonders if the Journal and the Society that supports it fought as vigorously in the past against *every* Federal Aid Act as now against the Sheppard-Towner Bill? Do the physicians refuse to ride over the hard roads built with the iniquitous "bribery and corruption" methods of Federal Aid?

The Sheppard-Towner Act runs for only five years. It gives $1,240,000 to be distributed annually among the states. Each state which accepts the provisions of the Act is given $5,000 outright and an added sum based on population, provided the state makes an equal appropriation. Illinois would receive $53,739 each year during the life of the Act provided it appropriates $48,739 each year to the State Department

of Health. The Federal tax would amount to about one cent per capita of our population.

The time to object to the *principle* of Federal Aid so far as the Sheppard-Towner Act is concerned, is past. The Act is a law. Illinois must pay her share of the Federal tax. The question now is, shall she get back some of her payment to benefit her mothers and babies?

The JOURNAL in its presentation of this case followed these first paragraphs with twenty-one so-called reasons why Illinois should not accept the provisions of the Sheppard-Towner Federal Act. These are herewith answered seriatim.

Objections 1 and 2 (page 173) "Illinois should refuse cooperation with the Sheppard-Towner Maternity Act from patriotic, moral, hygienic, public welfare and financial motives. That is to say, Illinois should refuse to cooperate with the Sheppard-Towner Maternity Act BECAUSE it is

1. An insidious attack upon the government of the republic and a potent malefactor against the bodily health of the citizens.

2. Socialistic rather than democratic; a political switchback rather than a child preservative."

Reply: There is no foundation whatsoever for such statements in the Sheppard-Towner Act. Only an intention to mislead would dictate them.

Objection: 3. "A fecund breeder of more and higher taxes. The government 'gifts' such as 'Federal Aid' are procurable for the people only by taxes from the people."

Reply: As has been stated, the Federal tax for the Sheppard-Towner Act is about one cent per person. The amount which Illinois would appropriate would amount to a per capita tax less than .8 of a cent. There surely is no *great* burden in that! In this case it is lives versus taxes, and who would not be willing to vote for lives?

Objection: 4. "The principle of Federal state aid as a means of financing public health work is an unsound financial policy."

Reply: Why? It is not unsound for a number of other purposes less vital than health, why then unsound for health and life saving? The principle of Federal Aid has never been declared unconstitutional.

Objection: 5. "Public Health worth, except those activities that are purely national in character, is essentially a function of the state and local government and should be paid out of state and local funds."

Reply: Why? On what principle? The United States Public Health Service constantly sends its officers and agents into the states and local communities to give their services in aid of local efforts or to direct and often finance local health work. Such service is frequently not connected with sanitation nor epidemics, but is directly in line with the educational service proposed under the Sheppard-Towner Act.

Objection: 6. "No such emergency exists as has been claimed for justification of the maternity act and there are no reliable statistics by which it can be proved that the United States stands seventeenth in the maternal death rate."

Reply: No one has ever given any proof that the figures of the Children's Bureau are not reliable or accurate, or that those of foreign nations are not to be trusted. The best informed physicians publicly acknowledge that the maternal death rate in the United States is larger than it should be and is not falling. (See above.)

Objection: 7. "The means provided in the act will not afford an effective remedy for alleged existing conditions."

Reply: There is no foundation for this statement. On the contrary, in every case where the death rate of mothers and babies has been lowered, it has been through just such educational service as that provided under the Sheppard-Towner Act; through the establishment of Child Health Centers, where mothers can secure information for themselves and their children; through extension of public health nursing service; by arrangements for *advisory* medical service; through instruction in prenatal hygiene and in the necessity for good care at maternity. Some figures may be quoted as interesting:

Oregon has an infant death rate of 51 out of 1,000 reported live births; Washington, 55; Minnesota, 59; Nebraska, 59; Kentucky, 62; Kansas, 63; California, 66.

Illinois had an infant death rate of 81 out of 1,000 reported live births in 1921.

New Zealand has an infant death rate of only 45.

The following cities have low death rates: Portland, Oregon, 48; Minneapolis, 55; St. Louis, 67; New York City, 71.

One mother dies out of each 150 reported births in Illinois. In Greater New York only one mother dies out of each 250 births!

In Chicago the death rate of babies in districts served by the Infant Welfare Centers is 14 per

thousand, while the general death rate of babies in the City of Chicago is 89 per thousand. In Moline, Ill., the death rate of babies under one year in *1912* was *120* per thousand live births. Through an intelligently directed educational health service provided by nurses and physicians, the death rate in 1920 was 44.4, in 1921, 43.3. "The reason for this very low rate is plain to any one who takes the trouble to inquire into the matter. A corps of instructive public health nurses adequate in number and competent in training minister to the needs of mothers and infants. The city is imbued with a fine community spirit, and after diligent search no evidence of paternalism or pauperism brought on by the nursing service was found." (*Illinois Health News*, December, p. 350.)

It has also been shown through the work of the Infant Welfare Society of Chicago that when a station was started in a district 80% of the women in the neighborhood were using midwives. After one year of this service the number using midwives was reduced to 12%. The women were referred to hospitals or to physicians in private practice to be cared for at maternity. This has been the history of all such educational service as that proposed under the Sheppard-Towner Act. *More doctors,* not fewer, will be needed to care for the women who will be educated to appreciate the necessity of scientific care at maternity. The bill will stimulate the demand for proper medical service instead of lessening it, as some of the doctors seem to fear.

Objection: "8. The distribution of Federal funds to state health organizations will inevitably lead to the domination and dictation of state activities by the Children's Bureau."

Reply: It is interesting that in the forty-two states which accepted the provisions of the Sheppard-Towner Act by action of their governors, and in the thirty-one states which have now accepted by legislative enactment and made state appropriations under this Act, *not* a single *head* of a *State Department* of Health (*all physicians*) was afraid of dictation from the Children's Bureau or the Federal Board of Maternal and Infant Hygiene! Such dictation is especially guarded against in the bill, as noted above.

Objection: "9. The ability of the Children's Bureau to dictate and largely control the appointment of the head of the Children's Bureau in each state as well as all of the public health nurses, district superintendents and others, will result in the organization of a large body of salaried employes appointed and largely paid by a Federal bureau, yet working under a state department of which they are to a large extent, independent. Such a condition will produce friction and confusion in a public health work, and will make possible the development of a political machine under the control of the Children's Bureau."

Reply: There is absolutely no foundation in the Act for such a statement. The Sheppard-Towner Act places the administration in the hands of the Federal Board of Maternity and Infancy with the Chief of the Children's Bureau as executive officer. The Children's Bureau is given only $50,000 a year to cover *all* the expenditures of administration of this Act. No political machine nor much of a bureaucracy could possibly be built up on that amount even if an attempt was made to do so! Moreover, *all* clerks in the Children's Bureau come under Federal Civil Service, and the Federal Board, or the Chief of the Children's Bureau cannot make one single appointment in any state!

Objection: "10. The problem of reducing maternal and infant death rates is largely a medical problem. Whenever it pleases the Sheppard-Towner Maternity Act authorities can work entirely under lay direction and independent of medical control."

Reply: It has been shown that social and economic conditions play as large a part in maternal and infant death rates as does medical service. (See Congressional hearing on Sheppard-Towner Bill.) Insufficient income, bad housing, insanitary environment and employment of mothers, ignorance of the mother in child care, raises death rates as well as does lack of care or improper care at maternity, and poor, or no, nursing. The Federal Board, therefore, is wisely composed of three members representing Medicine, Education and Social Science.

The Sheppard-Towner Act cannot be "administered entirely by lay people" whether they would undertake it or not, as Section 4 of the Act specifically states that in "In any state having a Child Welfare or Child Hygiene division in its Department of Health, the said Agency of Health shall administer the provisions of this Act through such Division." Every state has now a Department of Health, headed *by a physician,* and almost all have Child Hygiene divisions, headed by physicians, so it is absurd to say that

the Act may be directed by lay people only. There are not enough physicians in the country to carry on by themselves the educational service contemplated by this Act in addition to their service of care for the sick and disabled. Physicians will certainly be used for the medical part of the work. No one contemplates anything else. But nurses *are* qualified to carry on much of the educational service under this Act, as has been proved in all such health measures all over this country and others.

Objection: "11. With the exception of those activities which are clearly national in character such as quarantine and the regulation of interstate commerce and the like, public health work is a function of the state and local governments and should be paid for out of state and local funds and directed by state and local officials. The furnishing of instruction or care to mothers or any other persons needing such instruction is just as much a function of local government as is the providing of food and clothes for the destitute. The assumption and exercise of these functions by the Federal Government is an invasion of the legitimate activities of the state."

Reply: Fully answered above. But it may be added that of the six states not accepting so far the provisions of the Sheppard-Towner Act, New York voted the full amount of Federal and State appropriations from its State Treasury, while Maine gave the amount of the Federal Aid from the Governor's contingent fund, $5,000. If the State of Illinois wishes to give $103,000 out of its treasury and refuse entirely to accept Federal Aid, the mothers and babies probably won't mind where the money comes from so long as they are helped and their lives saved.

Objection: "12. Further, it is: 'A destroyer of individual rights and a developer of community supervision.' "

Reply: The Sheppard-Towner Act permits *no* intrusion into family life. It has *no compulsory* provisions; no one need accept the educational opportunities offered who does not wish to do so. The Act expressly states that:

"No official, agent or representative of the Children's Bureau shall by virtue of this Act have any right to enter any home over the objection of the owner thereof, or to take charge of any child over the objection of the parents, or either of them, or of such person standing in loco parentis or having custody of such child. Nothing in this Act shall be construed as limiting the power of a parent or guardian or person standing in loco parentis to determine what treatment or correction shall be provided for a child or the agency or agencies to be employed for such purpose."

Objection: "13. A conferrer of a *million* salaried jobs for political incumbents but not a dispenser of either clothing, shelter, food, medicine or medical care for any mother or any child."

Reply: Rather a large order, and not highly paid. One million dollars for one million job holders!

Objection: "14. A measure that will pay a retinue of politicians to disarrange the domesticity of a citizenry while the political wage is levied high-handedly out of the pockets of those whom the measure assumes to serve."

Reply: Politicians must be coming cheaper than usual to maintain a full "retinue" on the appropriations of the Sheppard-Towner Act!

Objection: "15. A masterpiece of false witness between politicians and the people both present and in the generations yet to come."

Reply: Could any one tell just what this means? It is certain that politicians did not pass the Act and are not agitating for its acceptance in Illinois. The people proposed this Act and the people of Illinois mean to have this service along with other needed public health measures.

Objection: "16. An invader of private morality and an abaser of humanity to the level of animal and poultry bureaus."

Reply: There are *no compulsory* provisions in this bill. No one need take advantage of its educational service unless she wishes to do so. (See above.) As to "abasing of humanity to the level of animal and poultry bureaus," it would be more like *elevating* mothers and babies to the level of the generous and solicitous care given for years by the State and Federal Governments to hogs and cattle, chickens and fish.

Objection: "17. A socialistic crime committed in the name of education."

Reply: There is nothing socialistic nor paternalistic in this Act. It expressly states "No money or moneys may be used for the payment of any maternity or infancy pension, stipend or gratuity."

Objection: "18. A lever increasing the powers lodged now in the Department of Labor, as by this bill the Children's Bureau of that portfolio becomes the official arbiter of the vital domesticity of the United States. Per sequence,

the temple of every woman's body becomes a political taxtable and an asset toward healers. Upon a woman's fecundity or lack of it will hinge the bread and butter jobs of a bureaucratic regiment."

Reply: Too vulgar and unfounded to need reply, and beneath the dignity of a scientific journal to print.

Objection: "19. An inductor of the practice of obstetrics to the rule of thumb of political chicanery and machine manipulation."

Reply: Absolutely no foundation for this statement, if it means anything at all.

Objection: "20. A fundamental process towards the eventual establishment of a permanent lay dictation of the practice of medical and surgical science."

Reply: Impossible under the Act. See reply to No. 10.

Objection: "21. A tax bearing boomerang, rending the citizenry by community, state, county and Federal levies for which will be received the octopus burden of a pack of straw bosses that will help no one and hurt many."

Reply: On a tax of less than one cent per head there will not be much with which to "rend the citizenry" nor "pay the pack of straw bosses!"

In addition to these 21 reasons (?), some physicians seem to have a dreadful fear that this maternity service may fall into the hands of politicians who might choose unfit physicians and nurses for the educational service of the state.

That is the chance we run in every department of public life! All public health work runs such risks, as well as our schools, the most vital mechanism in a republic. Should such a condition occur, the remedy will always lie in the hands of the voters—to displace unworthy officials with able and honest ones.

Fear is also expressed by some physicians that the Sheppard-Towner Act is the entering wedge towards State Medicine. No one seems to know just what State Medicine is, though it has been referred to in terms which would seem to indicate that it is a German system under which doctors are underpaid and overworked! *No one* wants to import such a system, and certainly not those who are in favor of the Sheppard-Towner Act, which does not even remotely suggest such a program. Under its provisions, the state will not "treat" nor "prescribe" for any one. All that is proposed is a *voluntary educational service* which *will* lower the death rate of mothers and babies.

It can easily be proved that a public health program is a benefit to the medical profession as a whole and to the private practitioner as well. *More doctors,* not fewer, will be required for the best sort of maternity service when women learn the necessity for adequate care before and after childbirth.

Again, some physicians are worried about the contsitutionality of the Sheppard-Towner Act. (Did these same people stay awake nights with a similar fear for other Federal Aid Acts?) The fact is that Massachusetts and the District of Columbia have raised the question of the constitutionality of the Act. In the suit brought by the treasurer of the Anti-Suffrage Society, the Supreme Court of the District of Columbia declared the Sheppard-Towner Act constitutional. The Supreme Court of the United States has not yet passed upon it.

That many of the people now opposing the Sheppard-Towner Act have not read the bill *as passed* is indicated in a further article in the Illinois Medical Journal headed "Maternity Education Should Be Directed and Supervised Only by Physicians." After registering objection to "the army of nurses, sociologists, politicians and other lay people generally, who will," he says, "carry out the Act," the author says "For this reason the direction of maternity education should be supervised by the U. S. Public Health Service and the Departments of Health in the respective states."

This is *just exactly* what the Sheppard-Towner Act provides!

It has been asked whether or not Illinois needs the service proposed by the Sheppard-Towner Act. A few figures compiled by the State Department of Health will, we believe, answer such a doubt.

In 1920, 23 entire counties (including over half of the population of the state) had infant mortality rates (deaths under one year of age) ranging from 231 per thousand reported births down to 100. The average rate for this whole area was 120 deaths per thousand reported births, according to figures of the Illinois State Department of Health.

In the same year, the states included in the United States Birth Registration Area had only 86 deaths per thousand recorded births, according to the U. S. Census reports.

Of the 974 fewer deaths of infants under one year in 1921 in the State of Illinois, as compared with 1920, there were 623 less in the city of Chicago and only 351 less in the downstate area, thus showing that where infant welfare activities are carried on, as in Chicago, a decrease of infant mortality naturally follows. The services under the Sheppard-Towner Act are more urgently needed downstate than in Cook County.

Illinois data for 1921 show 923 mothers lost their lives during childbirth or through hazards attending childbirth; 301 mothers died of puerperal septicemia, which is a preventable disease. Of these deaths 233 occurred downstate and only 68 in Chicago. Again, in 1921, 227 mothers died from puerperal albuminuria and convulsions. 162 of these deaths occurred downstate and only 65 in Chicago.

Twenty-three counties in Illinois have as *yet* no public health nurses, and only 17 counties outside of Cook County have Child Health Centers, a total of 43 in all.

In Illinois, in 1921, 10,644 infants under one year of age died, and 923 women died of maternity hazards—a total of 11,567 lives, many of which, it has been amply proved, could have been saved. The Federal Government offers Illinois $4.25 for each of these deaths, toward preventing such tragic loss in the future, provided Illinois will do the same. Can there be any question of accepting such an offer for such a beneficent purpose?

The Child Hygiene Department of the State Department of Health proposes, moreover, to use the Federal and State funds for an educational service with well-recognized and well-proved methods, which have been shown to produce definite results in saving of lives and promotion of health and welfare. This state program will include provision for the services of doctors and public health nurses to carry on the *educational* program.

Cooperation with local groups in the establishment of Infant Welfare and Maternity Centers, where mothers may secure advice on prenatal and maternity care, and instruction in the rearing of their babies.

The training and supervision of midwives.

A campaign for pure milk.

The distribution of literature and other educational material to further the general purposes of the Act.

There is nothing new nor revolutionary in such a program. It is founded upon the established principles of all Public Health Service. Why should not such educational methods, which physicians themselves approve and carry out for the prevention of tuberculosis, typhoid, diphtheria and cancer, and against the spread of contagious disease, not be applied to saving mothers and babies from the dangers of child-birth?

In quoting the speakers who voiced their objections to the Sheppard-Towner Act in the Congressional hearings before the bill became a law, the Illinois Medical Journal makes no mention of the leading physicians in the country who are in favor of the Act. Among this number may be mentioned:

Dr. L. Emmett Holt, New York City:

Dr. S. Josephine Baker, for 20 years Director of the Division of Child Hygiene of the New York City Department of Health. It was under Dr. Baker's direction that the death rate of babies in New York was brought down to the remarkably low level of 71 out of 1,000 births. The methods used were identical with those proposed under the Sheppard-Towner Act.

Dr. Richard A. Bolt, the Medical Director of the American Child Health Association.

Dr. William Palmer Lucas, of the University of California.

Dr. Bird T. Baldwin, Director of the Child Research Station of the University of Iowa.

The Illinois Medical Journal also fails to mention the fact that the State and Provincial Health Officers Association went on record as overwhelmingly in favor of the Sheppard-Towner Act. The Section on Diseases of Children of the American Medical Association also voted to endorse the Sheppard-Towner Bill, and the Chicago Pediatric Society has recorded itself in favor of Illinois accepting the provisions of the Act. No mention is made, moreover, of the fact that 20 national organizations of men and women worked continuously in support of the Sheppard-Towner Act during the years in which action was pending in the National Congress. 25 organizations in Illinois have banded together to work for the passage of the Enabling Act through the Illinois Legislature.

In taking this stand against the Sheppard-

Towner Act, both in the National Congress and in Illinois, the physicians who have opposed it have offered absolutely nothing to take its place. Since we have an unreasonably high maternal and infant death rate in Illinois, what service better than that proposed under the Sheppard-Towner Act do the objecting physicians of the State promise to the mothers and babies? It would seem to be clear that any physician or legislator who works on votes against the acceptance of the Sheppard-Towner Act in Illinois and thereby shows that he is willing that the high maternal and infant death rate in Illinois should continue, cannot escape the responsibility which the people of the State who need and want this service will unquestionably place upon his shoulders.

H. W. CHENEY.

Note and Comment:

The multiple inaccuracies in the above correspondence inhibit detail pointing out of each fallacious intimation. At the outset comment is made that the JOURNAL has never presented adequately, if at all, the arguments in favor of the Sheppard-Towner Act. In the two years during which the question has been up, not a letter, note or article commending the Sheppard-Towner Act has been received by the JOURNAL. The medical profession fails to stand at the head of the convert's mailing list. In the tons and tons of literature distributed far and near by the proponents of the Bill, through the Children's Bureau, working with taxpayers' money on government printing presses with federal supplies—on all this literature a simple setting forth of the probable disadvantages of the Sheppard-Towner Act is dodged diplomatically. In the organized speaking campaign and propagandization unequalled in the history of American politics, and that brought the words "Maternity Act" to every hamlet in the land, the super Towner partisans were just as successful in evading the presentation of the bill's preponderant untoward saliencies. Admittedly a wave of resentment is arising from many organizations of home women, who find now that their endorsement of the bill was secured through a misapprehension of the real purport of this legislation. They were not allowed to hear but one part of the question and that part doled out to them through the Children's Bureau literature.

CONTAGIOUS

"I don't know what is the matter with that child. He won't stay in the same place any length of time."

"He probably got it from his nurses."

HOW LONG?

Blake—"You look worried, Jim, and terribly pale. What's the matter?"

Drake—"The dealer who sold me my second-hand car the other day said it would last me a lifetime."—*The American Legion Weekly.*

HOTEL ACCOMMODATIONS FOR STATE MEETING

To be held in Decatur, Illinois, May 15, 16, 17, 1923

MAKE ALL RESERVATIONS DIRECTLY WITH HOTELS

Hotel	Location	No. of Rooms	With Bath	Without Bath	Double, With Bath	Double, Without Bath
Orlando (Headquarters)	Cor. S. Water and E. Wood Sts.	192	$2.50, $3.00, $3.50 (shower) $3.50, $4.00, $5.00 (tub)	$2.00 and $2.50	$4.50 to $9.00	
St. Nicholas	Lincoln Square	221	$2.00-$2.50	$1.50-$1.75	$3.75-$4.75	$2.75-$3.25
Kraft	Opposite R. R. Stations	90	$1.75-$3.00	$1.00-$1.25	$3.00	$1.50-$2.00
Brunswick	Cor. S. Water and E. Wood Sts.	50		$1.50		$2.00
St. James	153 S. Main St.	80	$1.50-$2.50	$1.00		

Members desiring rooms in private homes, write to Chairman of Hotel and Accommodations Committee. Those coming by auto, report to Headquarters, where they will be directed to garages.

DR. C. MARTIN WOOD,
Chairman, Hotel and Accommodations Committee.

Original Articles

CHRONIC INDIGESTION IN CHILDHOOD†*

JOHN LOVETT MORSE, A.M., M.D.
BOSTON, MASS.

In the first place, I want to thank you for the honor which you have conferred upon me in asking me to address you. I am especially grateful, because I am now a professor emeritus and because I was recently told by one of my confréres in Boston, fortunately older, not younger than I, that I belonged to a past generation in medicine. This may be true, but, if by the past generation is meant the generation which learned to use its ears and eyes and hands and, above all, its brains in diagnosis and treatment, and not to depend entirely or almost entirely on laboratory findings, I am glad that I belong to that past generation. I believe, however, that even if I do belong to that generation I am able to appreciate the value of laboratory methods and their findings, to make use of them and to evaluate them properly in connection with the clinical findings. It has seemed to me, at times, as if some at least of the younger generation were not able so to do.

Causes of Indigestion. Normally, the digestive powers are equal to the work demanded of them, that is, the digestion of the food. The equilibrium of the digestion may be disturbed by a decrease in the powers of digestion or by an increase in the work to be done in digestion. The decrease in the powers of digestion may be due to overfatigue, either physical or mental, to diseases outside of the digestive tract, and to disease of the digestive tract. The increase in the work to be done in digestion may be due to improper methods of eating, to too much food otherwise proper, or to improper food.

Decrease in the Powers of Digestion. This element in the etiology should always be the one first investigated. A careful detailed study of the child's whole life should be made, no matter how much time it takes, to determine whether the child is overfatigued, physically or mentally, and what the causes of this overfatigue are. In many instances it will be found that the child does not get sufficient rest and sleep, that it is playing too hard or too long, that it is studying too hard, that it has too many social engagements or too much excitement, that there is friction in the home or in the school. If overfatigue is found and the causes are removed, many cases of indigestion will promptly recover. In such cases regulation of the diet and the administration of drugs will do no good whatever, unless the causes of the overfatigue are removed.

Diseases outside of the digestive tract may sometimes be discovered in taking a careful history. Every child with indigestion should be stripped and examined carefully from head to foot. This examination should include the nasopharynx and the urine. The diseases, outside of those of the digestive tract, which most often cause indigestion in children are those of the nasopharynx and pyelitis. Until these diseases or abnormal conditions have been remedied, the indigestion will persist. No regulation of the diet and no drugs will relieve it, if there is continued absorption from diseased tonsils or abscessed teeth. It is most surprising how many cases of indigestion in children will be cured, if the life is properly regulated and other diseases and foci of infection cured.

Primary disease of the digestive tract is very uncommon in childhood. In indigestion, of course, there are no real pathological changes, but merely a disturbance of the functions of digestion. If there is disease, or rather a disturbance of the functions of the digestive tract, it is almost invariably secondary to a disturbance originating in the contents of the tract as the result of the ingestion of improper food or of bacterial fermentation in the food. If there is bacterial fermentation in the food, it is, as will be shown later, almost invariably primarily due to improper food and not to the implantation of abnormal bacteria. If there is disease of the digestive tract, it is evident, therefore, that the first thing to be done is to remove the cause, that is, the improper food. If only proper food is given at the proper times, in many instances, probably in the majority of the milder cases of indigestion in children, cure will result. It is most surprising how large a proportion of the cases of indigestion in childhood will yield to simple regulation of the life, the removal of foci of infection and reasonable regulation of the diet.

*Read before the Tri-State District Medical Association at Peoria, Ill., October 30, 1922.

†Certain parts of this paper have been copied, with the permission of the Journal of the American Medical Association, almost verbatim from a paper by the author on the same subject in the number of that Journal, published July 10, 1920.

Increase in the Work in Digestion. One of the common causes of increase in the work in digestion is an improper method of eating. Many children eat hurriedly; they rush in from their play, hot and tired, gobble their food and rush out again to play more. In other instances they come home from school tired and nervous and eat a hearty meal. In other instances they swallow their food without proper mastication or wash their food down with liquids. Children that eat hurriedly are, moreover, very likely to eat more than they would if they ate properly. The treatment is, of course, obvious. Children must be made to rest for a time before eating. They must be made to eat slowly and to chew their food properly. They must not be allowed to wash their food down before it is properly masticated.

Too much proper food is a possible, but not a common, cause of an increase in the work in indigestion. This brings up the question as to what is proper food for children, that is, what is a reasonable diet. In general, it is safe to say that the modern child is given too large a variety of food for its age and altogether too large an amount of sweets. This tendency to give a great variety of food is perhaps merely another manifestation of the general tendency to make children grow old too quickly. No one seems willing now to let a baby be a baby or a small child a small child. They want the baby to be a child, the child a youth and the youth an adult, much to the detriment of them all.

Improper food is unquestionably the chief cause of disturbance of the equilibrium of the digestion by increasing the work in digestion. In many of the milder cases no especial type of indigestion has been established by the improper food. The functions of digestion are simply disturbed and no intolerance for any of the food elements has been established. In such cases the elimination of the improper articles of food is all that is necessary to bring about a rapid cure.

In most of the more severe cases, however, the conditions are more complicated and an intolerance, more or less marked, for one or perhaps two of the individual food elements has been established. This intolerance is usually the result of overfeeding with this element, but a secondary intolerance sometimes develops for another food element, which has not been taken in excess. This intolerance for one or more of the food elements may or may not be associated with fermentation in the intestinal contents as the result of abnormal bacterial activity. Fermentation may take place in any of the food elements. It may occur in both the carbohydrates and the fat at the same time, but never can occur in protein at the same time that it is going on in the carbohydrates or fat.

Classification of Severe Indigestion. On the basis of an intolerance for one or more of the individual elements, indigestion in childhood may be divided into:

a. Indigestion with intolerance for fat.
b. Indigestion with intolerance for sugar.
c. Indigestion with intolerance for starch.
d. Indigestion with intolerance for protein.
e. Indigestion with fermentation.

The line between indigestion with and without fermentation is necessarily very indefinite and indistinct, because there is always fermentation going on normally in the intestinal contents. The line between normal fermentation, fermentation as a part of simple indigestion and indigestion with excessive fermentation must evidently be very indefinite. Fortunately it is not very important to draw this line, because the treatment is essentially the same whether there is or is not fermentation.

The present tendency seems to be to lump all the severe forms of these definite types of chronic indigestion together under the term of "coeliac disease," and to treat them all as if they all had the same etiology and were of the same nature. It seems to me that this tendency is altogether wrong, that it prevents clear thinking and interferes with the careful study and reasonable treatment of these cases. They do not all have the same etiology, are not all of the same nature and therefore cannot all be properly treated in the same way. In my experience the most severe cases are those of fat indigestion or of primary starch indigestion with excessive fermentation and a secondary intolerance for fat.

Symptomatology and Differential Diagnosis. All the types of chronic indigestion in childhood have many general symptoms in common, such as loss of weight and other manifestations of disturbed nutrition. Among these may be mentioned dryness of the skin and hair, cold extremities, pallor, irritability, peevishness and disturbed sleep. Other symptoms, which vary according to the type of indigestion, are diarrhea, constipation and the alternation of diarrhea and consti-

pation. The abdomen may be distended, normal in size or sunken. There may or may not be vomiting. Fever of varying degrees may or may not be present. None of these symptoms are, however, definite enough of themselves to justify a positive diagnosis as to the type of indigestion.

Something may be learned as to the type of indigestion from the condition of the bowels, the odor of the breath, the appearance of the tongue and the presence, absence or amount of gas, nausea and vomiting. Much more, however, can be learned from a careful analysis of the history, especially in relation to the diet. The diagnosis of the type of indigestion must, however, be made chiefly on the results of the examination of the stools, because the different types of indigestion have characteristic stools. The macroscopic examination of the stools is usually sufficient to justify a positive diagnosis as to the type of indigestion present. It should never be depended on alone, however, but should be verified by a microscopic examination, because the microscopic examination sometimes gives additional information and sometimes shows that the conclusions drawn from the macroscopic examination were not entirely justified. The miscroscopic examination of the stools is not a difficult matter and requires but a few minutes.

Examination of the Stools. A small portion of the stool is spread on a slide and stained with either Lugol's or Gram's solution. Starch granules stain blue or violet. Another portion is spread on a slide and stained with a saturated alcohol solution of Sudan III. The neutral fat drops and fatty acid crystals stain red. Soap crystals do not stain with Sudan III. A drop of glacial acetic acid is then allowed to run under the cover-glass. The specimen is then heated until it simmers. This changes the soap to fatty acids, which then stain. If it is desired to determine whether the fat is in the form of neutral fat or fatty acids, another specimen is stained with carbol-fuchsin. This does not stain neutral fat, but stains fatty acids a brilliant red and soaps a dull red.

I am aware that the chemical examination of the stools has seemed to show that the results obtained by this method of determining the amount of fat in the stools are unreliable. Nevertheless, I have found this method most helpful in clinical work and still use it. Common sense must be used in the interpretation of the findings of the microscopic examination of the stools. Unless the character of the food which the child is taking and the relation of the different food elements in the food to each other are borne in mind, erroneous conclusions may easily be drawn and, unfortunately, often are.

The bacteriologic examination of the stools is, in general, not of much clinical importance in the diagnosis between the different types of indigestion. Little additional information is, as a rule, obtained from it. The presence of many iodophilic bacteria, when the stools are stained with Lugol's or Gram's solution, indicates, however, an impairment of the powers of digestion of starch, even if no undigested starch is seen. The intestinal flora must be, of course, either fermentative or putrefactive, that is, one which forms acids from the carbohydrates or fats or alkalis from the proteins in the intestinal contents. The type of flora can, therefore, always be quickly and easily determined from the reaction of the stools. The reaction can be determined by placing a piece of wet litmus paper on the stool. It is important that the stool is not contaminated with urine. It is better to break up the stool so that the reaction is determined from the inside rather than from the outside. The reaction of the stool is most important. If only one test is possible, the reaction gives the most valuable information.

In the acid stool of carbohydrate indigestion the presence or absence of organisms of the gas bacillus group is of considerable importance in indicating the treatment. The determination of the presence or absence of the gas bacillus by the fermentation test is not difficult and can be carried out by any one in his office without special training. A fermentation tube, test tube and glass spatula are cleaned thoroughly with concentrated nitric acid and washed with water until the reaction is neutral. 1 cc. of Dextri-maltose and 1 cc. of the stool are then placed with the glass spatula in a test tube one-third full of water. This is boiled vigorously for one-half minute and poured into a fermentation tube, the tube being tilted back and forth to eliminate bubbles. The tube is stoppered with flamed cotton and placed in the incubator at 37 degrees centigrade for twenty-four hours. A warm room will do almost as well. The tube is then inspected for gas and the amount noted. If no gas is formed or the bubble is no larger than a pin head, then the re-

sult is negative. If there is less than one-half inch of gas, the result is questionable. If there is one-half inch or more of gas, the result is positive. It must be remembered, however, in interpreting the results of this test, that the presence of a few gas bacilli does not necessarily prove that they are the cause of the disease.

There is an excess of putrefactive organisms in protein indigestion. Porter and his co-workers have recently developed a method for the recognition of this type. It can be carried out, however, only in a well-equipped laboratory. Others have, however, claimed that his conclusions are faulty. It is possible that organisms of the butyric acid group or the bacillus acidophilus may be of importance. There are, however, no easy methods for recognizing these organisms, and there is no specific treatment, if they are found.

THE STOOLS IN INDIGESTION

Fat Indigestion. The stools are usually large, semisolid, gray and acid in reaction. They are sometimes loose and frothy and extremely acid, and sometimes dry, hard and crumbly. They are almost always gray, the white color due to soap being seldom seen in the stools of children. They often contain considerable mucus, especially if they are very acid. The odor is acid, often that of butyric acid. The oily stools and the small soft curds so often seen in the stools of fat indigestion in infancy are almost never seen in childhood. Microscopically the fat is almost never in the form of neutral fat, but usually in the form of fatty acids, although sometimes of soap.

Sugar Indigestion. The stools are loose, yellow or green, frothy and acid in reaction. The odor is that of acetic or lactic acid. The stools often contain mucus and are very irritating to the skin. Microscopically, little abnormal is to be seen, except undigested food particles which have been hurried through the intestines.

Starch Indigestion. In the milder cases the stools are loose, yellowish-brown or green, acid in reaction and have the odor of acetic or lactic acid. In the severer cases the stools are large, brown, mushy, acid in reaction and odor, and contain considerable mucus. When there is, in addition, a secondary disturbance in the digestion of fat, the stools are often gray in color and even more acid in reaction. The odor is very peculiar, being a combination of a foul odor with that of butyric acid. Microscopically the stools show undigested starch and iodophilic bacteria, and in the severe cases with secondary fat intolerance large amounts of fat.

Protein Indigestion. The stools are loose, brownish, and alkaline in reaction. The odor is foul or musty. They usually do not contain much, if any, mucus.

Indigestion with Fermentation. The characteristics of the stools are the same as in the other types of indigestion with the manifestations of fermentation superadded. The stools are likely to be frothy and to contain considerable mucus. The acidity or alkality of the reaction is increased, according to the type of fermentation present, and the odor is more acid or more putrefactive.

TREATMENT

There is no place for the so-called digestants in the treatment of chronic indigestion in childhood. It is safe to say that there is never an insufficiency of either pepsin or hydrochloric acid in these cases. Pancreatin is destroyed in the stomach and can, therefore, be of no use. There is nothing to suggest that there is an insufficiency of the bile salts. There is likewise no place for drugs in the treatment of this condition, except for the temporary relief of symptoms. Tonics, appetizers and antifermentatives are alike powerless to remove the cause of or to cure the disease.

Regulation of the life of the child to avoid overfatigue, either physical or nervous, care of the general hygiene and the enforcement of proper methods of eating are of great importance and will relieve many of the mild cases. Further treatment consists primarily in the regulation of the diet to fit the digestive capacity of the individual child. The element or elements which it can not take care of must be cut down to the point where it can take care of them. This point can only be determined by the examination of the stools. As a general rule, it is advisable to rapidly reduce the amount of the food element at fault to a point below the tolerance, and then to increase it to the point of tolerance, rather than to find this point by gradually diminishing it. The deficiency of calories which necessarily results from the reduction of the amount of the offending food element must be made up by increasing the amounts of the other food elements in the food. The amount of the element at fault should be gradually increased as the tolerance

for it increases. In general, it is not necessary to consider the vitamins in prescribing the diet in these cases of chronic indigestion in children, because it will be found that even on very unusual and restricted diets there are almost invariably enough vitamins present. They should be thought of, however, in order to avoid possible trouble from an insufficiency of one or more of them.

It is evident that, when indigestion is treated in this way by regulation of the diet, the physician must know exactly the composition and caloric value of all the foods which he orders. He must not only understand the matter himself, but he must be able to explain it to those who have charge of the child. It is not sufficient to give general directions as to cutting down one or more of the food elements. He must give explicit directions as to just how much of each food element is to be given, or at least the maximum amount of the offending food element and the minimum amount of the other food elements. It is necessary to have tables showing the caloric value of various foods, and the content in grams of fat, carbohydrates and protein of each food, to give these to the parents and to show them how to use them. This is not as difficult as it seems, because all educated people now, as the result of reading the lay journals, know something about the different food elements and the caloric value of foods. In fact, many of the laity know more about these matters than the average physician. It is very easy, as a rule, to get the coöperation of the parents. It is also easy to get the coöperation of the children. In fact, children will follow a diet far more closely, and are much less likely to overstep its bounds, than adults.

In mild cases of fat indigestion it is usually sufficient to cut out butter, cream and bacon and to limit the number of eggs. In more severe cases the milk should be skimmed and eggs cut out entirely. In the severest cases it is necessary to have the fat entirely removed from the milk by centrifugalization and every source of fat in the food removed. I have seen children so sensitive that the fat contained in one or two ordinary crackers would show in the stools. I have even seen a child set back for several months by giving a piece of butter the size of a pea.

Sugar indigestion usually ceases promptly when all sugar, candy and sweets, such as ice cream, cake and cookies, are removed from the diet. Sometimes it is advisable, as in indigestion in infancy, to change the form of the sugar rather than to cut it out entirely. This, however, is usually not necessary.

Mild cases of starch indigestion are due more often to potato starch than to any other. They are promptly relieved when potatoes are removed from the diet. In general, it is advisable not to have healthy children eat potatoes daily and to limit the amount of potatoes which they eat. Certain children have an intolerance for certain types of starch, while others are intolerant of other types. It is often possible, therefore, in the milder cases of starch indigestion to continue to give starch, provided the kind of starch is changed. In general, the starch of rice and wheat is more easily digested than the other starches. In the most severe cases of starch indigestion it is necessary to cut starch entirely out of the diet. Even a little will do harm and prevent improvement. In these cases of severe starch indigestion there is almost invariably a secondary intolerance of fat. The diet, consequently, must be made up almost entirely of proteins. It is not as difficult as it at first appears to plan a diet composed almost entirely of proteins, which will contain a sufficient number of calories. Fat free milk must form the basis of the diet. It may be given plain, in the form of junket, or in the form of blanc-mange prepared with gelatin. Meat, especially the white meat of chicken, which contains less fat than other meats, is usually well borne. Protein may also be given in the form of white of egg. Another useful way of giving protein is in the form of cottage cheese. Casein may also be given in the form of casein flour made into biscuits or bread. In the severest cases fat should not be used in the preparation of these biscuits or bread, because of the intolerance of fat. I have usually used the diaprotein flour. Eight ounces of fat free milk contains 80 calories. A level tablespoonful of chopped chicken about 17 calories, and a rounded tablespoonful, 25 calories. The cottage cheese made from one pint of skimmed milk contains 72 calories. The six or eight muffins made with a measure of diaprotein flour contains 184 calories. It is usually advisable, however, not to give a strictly protein diet continuously, because of the danger of acid intoxication. This can be avoided and the caloric value of the food increased by the addition of sugar to the food. As a rule, children with starch indigestion can bear a small amount of sugar, if

the diet is otherwise made up entirely of proteins. It is advisable to give this sugar in a form which is absorbable high up, and which leaves little residue in the intestines. Corn syrup meets these indications better than any other form of sugar. This is composed of maltose, twenty per cent., dextrose, fifteen per cent., dextrin, thirty-two per cent., cane-sugar, three per cent. One ounce, by volume, contains 136 calories. It is usually impossible to give children more than three ounces of corn syrup daily without causing disturbance, although some will take as much as five or six ounces daily. When these patients begin to improve, a little starch can be added to the diet and also a little fat. In some cases the results are better, if fat is first added; in others, if starch is first added.

In protein indigestion the amount of protein in the diet must be cut down to the minimum protein need and the caloric requirements made up by an increase in the amount of carbohydrates, the increase being greater in the starches than in the sugars. In general, it is wise to keep the fat low in these cases. Protein indigestion is relatively uncommon and usually yields promptly to treatment.

In those cases in which there are marked clinical evidences of fermentation, bacteria undoubtedly play an important part in the production of the symptoms. They presumably also play a part in those cases in which the evidences of fermentation are less marked. What proportion of the symptoms in a given case is due to bacterial fermentation, and what proportion to disturbance of the chemical processes of digestion is, however, almost impossible to determine. It is likewise impossible to know whether the trouble was originally due to bacteria, or whether the bacterial fermentation is secondary. In general, however, it is probable that the difficulty was not originally due to bacteria, because it is impossible to permanently implant any organisms in the intestines by giving them in the food. Fortunately, it is unimportant to know which is primary, because, whether primary or not, abnormal bacterial activity must be stopped. It is impossible to permanently change the intestinal bacterial flora by giving bacteria by the mouth, although the flora may be somewhat modified temporarily, if the bacteria are given continuously. The character of the flora can only be changed by changing the composition of the food, that is, by changing the medium on which the bacteria grow. If it is suitable, they thrive; if it is unsuitable, they do not. Cutting down the proportion of carbohydrates and increasing that of the proteins in the food, therefore changes the flora from the fermentative to the putrefactive, while cutting down the proportion of the proteins and raising that of the carbohydrates changes it from putrefactive to fermentative. This can be proved by bacteriologic examination of the stools, but is shown equally well by the change in the reaction of the stools, the stools being acid when the bacterial flora is mainly fermentative and alkaline when it is mainly putrefactive. Organisms growing on fat have relatively little to do with fermentation in the intestinal tract, but the products of their activity increase the acidity of the stools. The treatment by regulation of the diet which is indicated by the examination of the stools thus not only aids the weakened digestive powers but also diminishes fermentation by changing the bacterial flora.

When the organisms of the gas bacillus group are the cause of the fermentation in the intestinal contents something may also be done to limit their activity by the administration of organisms which produce lactic acid. The best type for this purpose is perhaps the Bacillus bulgaricus. It is more effective when given in the form of buttermilk than in tablets or cultures, because of the far greater number of organisms which it contains. Furthermore, the buttermilk contains considerable amounts of lactic acid which is itself inimical to the growth of the gas bacillus. The lactic acid forming organisms are also of some benefit in the treatment of protein fermentation, because they are also inimical to the growth of putrefactive organisms. In such cases the milk may be modified to contain a low protein and high carbohydrate and the organisms grown in it. It must be remembered, however, that the lactic acid organisms can not change the bacterial flora permanently. This can only be done by so changing the diet as to change the character of the culture medium in the intestines.

Prognosis. The prognosis depends on the severity of the individual case, the thoroughness of the treatment, and whether or not the parents coöperate in the treatment. Recovery is usually prompt in the mild cases due to fatigue, parenteric infections, improper habits of eating and an excess of proper food, if the cause of trouble is

removed. It is fairly rapid in the cases which are due to improper food, if an intolerance for one of the food elements has not been established. In the severe cases in which an intolerance for one or more of the food elements has been established, recovery is a matter of months and often of years. It is almost invariably interrupted by relapses. The most stubborn cases are, in my experience, those of severe starch intolerance; next, those of severe fat intolerance. In time, however, if, in spite of apparent lack of progress and frequent setbacks, treatment is kept up along the proper lines, recovery almost always eventually takes place.

SYPHILITIC STRICTURE OF THE RECTUM*

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Syphilitic stricture of the rectum is not very frequently seen by the general practitioner. It is a rather rare condition and peculiarly occurs in a type or class of people of low social status. In a large general surgical clinic one meets with this condition only about 25 or 30 times in the course of a year. Another interesting feature is that it occurs particularly among negroes, and 95 per cent of the cases are among women. I have only seen three cases among the white races —two of them being women and the other a man of Greek nationality.

All patients had been practically rendered destitute by the condition which had persisted from one month to a period of several years duration before I saw them. Frequently, the patient had been the round of many physicians and finally to the free clinic, and altogether their general situation was deplorable. Unfitted for work on account of constant incontinence of the feces and made miserable by a more or less constant pain.

Syphilis is not an outstanding feature in these cases and in a great many of them the first intimation they have had of the contact is when they are informed that their Wassermann's are positive, as they never had a primary lesion or any other secondary or tertiary manifestation before.

The history of the typical case is one in which the patient is of the impression that she is suffering from hemorrhoids with passage of a mucus slightly blood tinged, and increased soreness of bowel movement. As time passes and the condition becomes more acute the evacuation of the bowel becomes progressively more difficult and finally the patient has to resort to the continual use of cathartics and enemas in order to render the stools fluid.

General Description—In the uncomplicated case, on inspection of the rectum one either sees a normal sphincter or one that is slightly relaxed and partly infiltrated. On opening the sphincter with a speculum there is immediately a discharge of foul, gray mucus pus probably tinged with blood. If the spincter is dilated and infiltrated there is then a constant discharge of the same type of pus. Introducing the finger in the rectum one meets with a firm resistance either directly within the sphincter or as a rule about a finger's length up the rectum. Most of the cases of syphilitic stricture occur just within the rectum and the proportion of occurrences relatively decreases passing up the rectum. One is generally able to palpate a normal, freely movable bowel mucosa above the diseased area but occasionally the infiltrated tissue will extend up the colon a matter of several inches above the examining finger. The bowel at the point of stricture is firmly fixed to the surrounding tissues and to the posterior vaginal wall. On examination through the vagina the feeling is one of a large infiltrating mass, non-movable and usually terminating before one reaches the posterior portion of the vagina.

The proctoscopic examination is not satisfactory owing to the limited extent one is able to see of the stricture. The mucosa is congested and of a velvet red color and is covered with a gray mucous discharge which readily wipes away with cotton pledgets. Frequently there will be one or more points of ulceration at the site of the stricture. The base of such an ulcer is filled with sluggish granulations which bleed freely upon manipulation and examination. One is rarely able to introduce the proctoscope beyond this point and under no circumstances is any force to be used in attempting to introduce the instrument through the stricture. One reason is because it is a needless cause of pain and the other that there is always danger of breaking through the bowel wall and plunging the proctoscope into the abdominal cavity.

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A differential diagnosis has to be made both on the digital and proctoscopic examination, aided by the blood test, between this lesion and that of carcinoma. In the digital examination the feeling is one of a firm nodular mass completely surrounding the bowel wall, whereas the carcinoma is generally of a more spongy type and has a crater formation. The proctoscopic appearance of the two is ordinarly quite different. The one of syphilis being a process of proliferation without destruction while the carcinoma shows a proliferation with a large crater destroyed in the center. To be absolutely positive in making a differential diagnosis one has to remove a section of tissue from the growth and make a microscopic examination. Even in the case of a positive Wassermann if there is any question or doubt in the mind of the examiner as to the appearance of the lesion, the section should be removed for examination. Post-operative stricture does not offer any difficulty in differential diagnosis. One has the history of the case and there is not the peri-rectal infiltration that accompanies syphilis. Hemorrhoids, occasionally tuberculosis and blind fistula with a purulent discharge and even amebic dysentery have been confused with this condition.

Complicating Fistulas—Not infrequently cases are complicated with one or more fistulas. The internal opening is found in the center of the constricting mass or where the disease joins the normal bowel mucosa above. The external opening may be found at any of the typical locations of the ordinary uncomplicated fistula, except that they are occasionally inclined to rupture through the vaginal wall, whereas, this is an unusual outlet for the ordinary fistula. In many of the severe types of cases the entire peri-rectal tissue is undermined by a complicated network of discharging fistula tracts. There are numerous skin openings and they spread in all directions in the peri-rectal spaces. Where the stricture of the rectum is complete the fistula tracts discharge the entire fecal output. The occurrence and re-occurrence of peri-rectal abscess requires one operation after another. The patient is practically incapacitated if not completely bed-ridden.

Microscopic Pathology—The general conception of pathology in this condition is one in which the gumma originates just under the mucosa of the bowel and after reaching a certain stage of growth produces stricture of the bowel. Ulcerations of the mucosa appear over the gummatous area. Sections cut from this tissue through the base of the ulcer show a complete destruction of the mucosa with a round cell infiltration extending well into the muscularis and the whole imbedded in a thick fibrous tissue mass.

Treatment—The treatment for syphilitic stricture of the rectum entails a combination both medical and surgical, manipulative as well as operative.

First of all one should treat the syphilis. The treatment in syphilis should be started immediately upon the diagnosis of the case, giving regular injections of Salvarsan and bi-weekly injections of mercury to be followed with massive doses of potassium iodide. Under this treatment alone we occasionally see the disappearance of condylomatous masses about the rectum and an improvement, if not a cure, of the proctitis. The mere giving of anti-syphilitic treatment will not cure the disease so thoroughly as it does in other parts of the body. For instance, there is nothing more satisfactory than to see the disappearance of gummatous masses about the head or anterior chest wall when specific treatment is started but we do not see the same thing taking place in the rectum. In the upper alimentary tract, in syphilis of the stomach, the tumor mass in the pyloric region will occasionally disappear with treatment but in the rectum the pathology is very different. On account of the deep inflammatory reaction and round cell infiltration and subsequent deposits of fibrous tissue, the lesion takes on the character of an inflammatory type rather than one of true syphilis and the result is that this tissue does not respond to treatment.

From a summary of the above one can readily see that mechanical means will have to be adopted in order to overcome the inflammatory restriction; therefore, in the mild type of case one resorts to dilitation by digital manipulation to be followed by a course of dilating sounds and bougies—again the warning to be given, that the bougie and the sound are dangerous instruments if any force is applied, for they are liable to break through into the abdominal cavity. In most cases a fairly good movement can be established by this method so that the patient can have a bowel action in comfort.

The first step of the operation is done under a general anesthesia. The subsequent dilations should be made bi-weekly and should be repeated over a period of two or three months. Throughout this treatment the patient should use daily rectal douches of hot saline. This acts as a stimulus to the sluggish mucosa and tends to relieve the proctitis. In the more advanced type of case where the lumen of the bowel is practically obliterated and the peri-rectal infiltration is very dense and extensive one is not able to break through this fibrous tissue by the manipulative method. Here we resort to operative methods. The procedure which we have used several times successfully consists first in dilating the sphincter; secondly, in introducing a short proctoscope up to the stricture, removing the obturator from the proctoscope and under vision making a slight pressure with the instrument against the mass of the stricture. The opening in the stricture is found by the introduction of the probe and from this in four directions incisions are made through the mucosa and down through the underlying fibrous tissue. The size of the incision is controlled by the lumen of the examining proctoscope. Following this the proctoscope as a rule can be readily pushed along through the enlarged opening. If the resistance is too great one can withdraw the proctoscope and the dilatation carried out by the digital method, which is rendered much easier following the incision through the fibrous bands. There is some tendency to bleeding which is taken care of by the introduction of a large rubber tube wrapped with vaseline gauze through the site of the stricture. This can be left in place for three or four days and the patient is able to leave the hospital at the end of a week or ten days. One is able to start rectal dilations at the end of two weeks. Here again the same routine is followed out as in the first type of case.

The third and hardest type to handle is that heavy stricture complicated by multiple fistulas. Here one so frequently sees the large horseshoe incision around the rectum with the entire peri-rectal space packed and repacked with gauze for a matter of weeks and months followed by an incontinence and never satisfactorily improved. Where the fistula tracts are only superficial and do not lead down to a great depth in the rectum they can be opened widely and allowed to heal by granulations.

In a few cases where the complicating fistulas are hopelessly inoperable and where the operation would probably injure the sphincter beyond any hopes of repair and again in such strictures where the rectal mass passes far above the tip of the examining finger, we resort to the most drastic of all steps, that is, a left inguinal colostomy. I saw a patient two years ago who, three years previously, had had such an operation performed upon her making a complete colostomy. The stricture masses were still present but all fistula tracts had healed spontaneously and she was quite comfortable and would not consider having an operation for a closure of the colostomy, inasmuch as she had developed a very good control and stated the inconvenience was as nothing compared to the continual soiling that accompanied the old condition and a constant pain that was always present. We hope by this method to be able to do a temporary colostomy for a period of six months in which time an attempt will be made to cure the proctitis without the tendency to secondary infection from feces. The fistula tracts will heal, and by operative and manipulative methods, accompanied by a continuous specific treatment we hope to make some advance in what otherwise has been a hopeless situation.

In a later paper we expect to make a report in a series of animal experiments now in process of preparation.

CYSTOSCOPY AND THE GENERAL PRACTITIONER

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The object of presenting this paper is to point out the value of cystoscopy from the point of view of the general practitioner. Omissions in its use, it must be admitted, oftentimes leads to error and by procrastinating the best opportunity for surgical relief and cure is frequently allowed to pass. It is not necessary or even desirable to use the cystoscope in routine examinations, but it is desirable and useful not only, as admitted by all, in the examination of patients suffering from hematuria and pyuria, but also in those cases where the urinary findings and micturition symptoms are only of apparently trivial character.

There can be no doubt that it is of as great credit to the practitioner to diagnose a condition in the incipient period — so that the necessary measures of relief may be instituted—as it is of benefit to the patient, who will not only appreciate the service, but ever afterwards remain faithful to him.

Take, for instance, the time old honored, "neoplasm of the bladder," with its potentiality of malignancy. There are many authorities who believe in and teach the radical removal of *all growths*—because even if admitted that they are benign tumors, no one has yet been able to state when a growth may become malignant, even if particles, which are passed or removed with the rongeur or forceps show no tendency toward malignancy—because, as a rule, in the early stages of transformation it may only be the *base* of a tumor, which may show this change. Judging from the number of malignant growths which I have been allowed to observe at the office and in the hospitals, while associated with Dr. L. E. Schmidt and in my own practice, location and their course have made me become more than ever an ardent advocate of the early diagnostic value of the cystoscope.

In connection with this subject of early urinary symptoms of neoplasm, it must be admitted that heorrhage or blood in the urine is possibly the first sign or symptom in fully 50 per cent. of the cases—and yet the condition is far advanced at this stage—but what of the remaining 50 per cent of cases? Here slight or trivial symptoms referable to the urinary tract may be the signpost of impending danger. If, therefore, cystoscopy were promptly employed, early diagnosis of the condition might prevent the above referred to period of transformation entirely. The present status of treating the papillomata with the high frequency current gives such wonderful results that everyone familiar with it cannot but advocate its use—excepting in those cases where it is impossible to do so. The results of surgery or results of treatment with radium or x-rays of malignant growths are so unsatisfactory that even if only a few cases by early diagnosis and treatment can be prevented from reaching the turning point into malignancy, a great deal has been accomplished.

Taking another class of cases into consideration—the common, "enlarged prostate!" It is not necessary to always expect to see an old or decrepit man. A fair number of cases that I have been allowed to observe have been under the age of 55 years. In some instances the urinary symptoms of frequency and difficulty of urination and frequently of urination accompanied by more or less severe gastric disturbances have existed from 10 to 20 years and during this period of time have been variously treated, but probably chiefly from the dietetic standpoint—in the hope, no doubt, of changing the character of the urine in order to alleviate the urinary symptoms.

In one instance of a man of 48 years of age an enormous prostate — protruding into the bladder—was revealed, which on removal not only freed the patient of his urinary symptoms, but gave practically immediate relief of the distressing gastric disturbances.

Permit me to refer to "stone in the bladder." It has been my good fortune to see quite a number of cases where only the slightest traces of urinary disturbances were present, yet where cystoscopy revealed very promptly the cause of the trouble. It is true that x-ray examination might have done the same in some cases, but we must not forget that a negative ex-ray does not mean that no calculus exists, but simply that no calculus of a composition sufficient to throw an x-ray shadow exists, as is the case in the large number of calculi, where the predominant chemical constituents are uric acid and urates. (According to some observers 50 per cent. of vesical calculi are not shown by x-ray, even granting a most competent radiologist, owing to this fact. This percentage we believe entirely too high). But we are sure a calculus is but rarely missed by a careful cystoscopist, and furthermore, how many of us advocate x-ray examination where but trivial symptoms exist? In three cases observed by us cystoscopy corrected a diagnosis of bladder stone made by the radiograms and revealed lodgement and protrusion of ureteral stones into the bladder.

Foreign bodies are occasionally met with in cases where one might not suspect their introduction. Besides consider the further information gained by cystoscopy in advanced cases of obstructive conditions. Here the cystoscope will reveal the degree of the so-called secondary changes produced and this gives a clew often times as to the prognosis to be given.

Consider the usefulness and the field of cystoscopy in general—the little and big things

which can be revealed, or often we can verify conditions suspected, passing thus from guess work into the realm of absolute. In incipient tabes dorsalis the finely trabeculated bladder is an early diagnostic point, particularly when the urinary symptoms are the early ones. Consider the innumerable number of cases of diverticula which are the causes of all kinds of urinary disturbances, from the slightest to complete retention, etc.—also recall all the gynecologic cases, which have passed through your hands, suffering from urinary difficulties! Is it not to the advantage of the general practitioner to know that the symptomatology is due to the gynecologic condition and that by their correction the urinary symptoms can be made to disappear or at least be alleviated?

Above all is it not of the greatest value in the successful handling of a case to know the source of blood or pus in the urine? It is in these cases, where routine work may be advocated.

Ureteral catheterization is essential in many cases not only in order to determine definitely the character of the urine excreted by each kidney, but also to determine their functional capacity. The early diagnosis of renal tuberculosis, which is of such great importance to the patient is made possible only by ureteral catheterization. This procedure must not be regarded as one which should be relegated to the specialist.

In order not to increase the length of the subject at hand just consider all additional information, which can be obtained by ureteral catheterization and the routine examination, bacteriologic and otherwise, of the separately collected urines!

In this group of "pus in the urine" cases it is possible to decide whether one or both sides are involved, the character of infection, whether or not cases are to be treated medically or surgically. The colon bacillus infections for example, which are so common, why not keep them under your own care and observation? Recall your cases of pyelitis! No doubt there are some cases where local treatment, lavage of the pelvis, would give good results whether it be with nitrate of silver solution or other medication. Naturally ureteral catheterization is used not only for diagnostic purposes, but likewise for treatment. It will be well not to dwell too long on this subject, as the treatment for removal of stone, or the treatment of pyelitis in children, as well as during pregnancy, or other groups of cases would each be sufficient to give material for a paper. In using cystoscopy one must never forget that there may be two or more conditions giving rise to urinary disturbance. I need only mention tabetic cases suffering from enlarged prostate or pyelonephritis with stone in the bladder, etc.

Above all we must remember that all urinary symptoms are not due to conditions within the urinary tract, but that general conditions, such as nephritis, glycosuria, obesity, etc., may be the cause; conditions outside the urinary tract, such as appendicitis may be the cause; conditions in the female pelvis, such as pus tubes, uterine disturbances, may be the cause; conditions in the male pelvis, such as the adnexa of the uretha, prostate or seminal vesical troubles may be the cause; conditions of the urine, such as phosphaturia, urine heavily loaded with urea may be the cause and finally and above all others, diseases of the urinary tract itself such as have already been enumerated, may be responsible for the symptoms.

Now, why are cystoscopy and the manipulations accompanying the same not taken up by the general practitioner? Not on account of any unusual obstacle; anyone graduating in the present day schools is certainly given every opportunity. Furthermore, the present day teaching of the laboratory methods as well as examination of patients with ophthalmoscope, laryngoscope, etc. permit every practitioner to learn delicate manipulations, and thus give him the necessary impetus for carrying out methods of examination, which should be in general use.

As regards the technique and the armamentarium: Only one instrument is necessary, and with an ordinary amount of care an instrument ought to last a lifetime. It is impossible to expect a general practitioner to be equipped with all types of cystoscopes and adjuncts, but I wish to reiterate, in the large majority of cases where cystoscopy is indicated, one and only one instrument is desirable. Besides the practitioner who does not devote his entire time to genito-urinary work, can qualify himself better by limiting himself to one instrument and by following one and the same technique throughout, thus assuring good results. In this way the least number of patients will have to be referred elsewhere. It is not expected, naturally, that the general practitioner

should be able to handle cystoscopy in the real young, when special instruments are necessary, nor to always be in a position to examine successfully every patient that happens to present special difficulties, or diagnostic problems. He may find it difficult to acquire sufficient skill for carrying out ureteral catheterization in difficult subjects or complicated cases or he may shrink from doing pyelographies, but every well trained practitioner and surgeon should avail himself of the cystoscope in the simpler cases which almost daily present themselves.

No other special equipment is necessary, as every one practicing medicine has syringe or irrigator. The usual examination can be made at the office and cases need not be referred to the hospital. Unusual preparation is not necessary, none other than what would be used for the passage of sounds or catheter. Finally, as to position; any examining table or even kitchen table, with patient on back, possibly with hips slightly elevated, will permit examination. A specially constructed table is absolutely unnecessary. Naturally little details will arise and be met successfully by those who are interested in their work.

Furthermore, general nor even local anesthesia is unnecessary. If none is used the examiner becomes more adept and unquestionably produces no traumatism, and this surely is a great advantage, as patients will then permit of frequent treatments if necessary. Occasionally a general anesthetic may be advisable; or spinal anesthesia may be used.

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THE CASE OF THE FAMILY DOCTOR

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Recently a young tenant farmer of my acquaintance became acutely ill. He called the family doctor, who diagnosed his case as acute indigestion, administered some simple remedy and advised him to be more temperate in his eating. But the young farmer was a nervous fellow; also he was imbued with the modern spirit of doubt. A neighbor had told him of a certain more or less justly celebrated clinic. It was described as a marvelous place—a sort of pathological Ford factory, indeed where hundreds of skilled doctors turned out thousands of finished patients every working day.

The young tenant farmer had suffered great pain in his abdomen and had felt smothery and panicky. The attack passed, but fear and doubt remained. Perhaps he was the victim of an appendix or a cancer or a leaking heart, he reasoned, so the following morning he packed his wife and two babies into the trusty flivver and, turning his back on a half-harvested wheatfield, hiked, pellmell, day and night five hundred miles to the famous Clinic. He arrived safely and, after a tedious wait, was put through—by which is meant that he was percussed, lavaged, x-rayed, Wassermanized, leucocyte-counted, electrocardiographed and basal-metabolized. Also, his biography was minutely recorded. Then he was told to go home and be more temperate in his eating.

I once knew a young lady who suffered from a serious cardiac lesion. She lived constantly on the border line of broken compensation, an invalid to whom the family doctor could give no hope. But a friend advised her to visit the distant Shrine. She went and, after a precarious journey, managed to get back home again, but in an exhausted condition. And the panacea she brought back with her, which was the only possible prescription for her condition and the one the family doctor had always administered, was digitalis. Poor girl, she never completely rallied from the hardships of her trip, and her remaining days on earth were miserable and few.

These are but two of many instances that might be recounted and could be duplicated, no doubt, in every community of the west. All of which bring us up against the problem of the disappearing family doctor, and the unfaithfulness of his clientele. For the good old family doctor is vanishing, and the people are losing faith in him. Is this loss of faith warranted and is his passing to be desired? The examples, taken from actual experience, related above, tend to indicate that the attitude of the public toward the family doctor is unjustifiable. I believe such is the case. I believe the general practitioner is, or tries to be, as good and honest as he has ever been; and that he is as skillful and efficient in the general field as, and more human and conscientious, than the laborers in the large Clinic.

It seems to me that propaganda, both active and unconscious, is the thing that is undoing the family doctor and making critics and skeptics of the people. In matters medical, often the most learned of the laity are crassly ignorant. Schol-

arly clergymen are quite frequently the dupes of charlatans. On every hand, cults that offer a short cut to health are blazoned forth. Chiropractics and Chiropodists are given the title of doctor, and to the layman all doctors are doctors. Quacks are promoted by the press and advertised by their loving friends, while the good old family doctor stands aloof and shakes his head. He knows what miserable frauds they are, but he says nothing. They make extravagant promises; he tells the truth, which may be mighty, but, in the matter of human ailments, does not always prevail.

The actual charlatans, who, under the dispensation of modern "regulations," multiply like rabbits, are doing much to push the family doctor into desuetude; but it is of the more complex and delicate subject of the Specialist and the Big Clinic that I wish particularly to write.

In the beginning the Clinic of specialists was a place of last resort, to which the general practitioner referred his obscure and unusual cases for cooperative diagnosis and treatment. Such cases went on the home doctor's recommendation, with a carefully written history of their condition, and often they were "referred back" to him for treatment. As the Clinic increased in size and equipment and grew in fame and patronage, however, it became a quite different institution. Its immensity and magnificence impressed the patients. It possessed newfangled apparatus which the family doctor had to admit were quite beyond him. It had card-indices, uniformed attendants, distinction, class. The patient returned home, better or worse in health, as the case might be, but a confirmed and zealous propagandist. He did not discern that the remedies prescribed were the same as and the results no better than those of the doctor at home. If sent home to die, he proceeded to do so meekly and resignedly, in the assurance that he had been passed upon by the Big Clinic. Instead of an ordinary Corpse, he would become a Statistic.

So it has come to be the fashion for all who can afford it, and many who cannot, to ignore the family doctor and seek succor, when possible, for every ailment at the Shrine of the Clinic. In short, the Big Clinic has become a sort of Mecca, to which the afflicted make their pilgrimages with much of the devotion and blind faith of the followers of Mahomet.

Possibly this condition is due to the public's suggestibility and lack of discrimination more than to conscious effort on the part of the clinicians to bring it about; yet it must be admitted that they have made no attempt to destroy the illusion that the Big Clinic is the place of superwisdom and wonder-working. The patient who rushes to the Clinic with the common or garden variety of bellyache is not told frankly of his folly and sent on his way. The family doctor told him, in five minutes for three dollars, what the Clinic told him after ten days, for a hundred dollars. The family doctor's bill is still unpaid, the Clinic got the cash. The costly paraphernalia and prolonged cross questioning and card-indexing did this particular patient no practical good, but it impressed him. And it impressed him in the same way that incantations and snake dances impress his savage brother. To the credulous public the Clinic is fast becoming a place of superstition, of miracles and mighty magic.

And the good old family doctor, owning only a few plain instruments, a dinky microscope, a small x-ray machine and a dozen test tubes, is a back number. The people fail to remember that he graduated from the same school, reads the same books, has as much sense and (at least) as tender a conscience as the renowned Clinician. Between the Quacks and the Clinics, with the shadow of State Medicine looming near, the family doctor's finish is not far ahead, unless something is done to reeducate the people and renew their faith in their first, last and best friend.

The doctor who feels that his people are losing their faith and loyalty is likely to find his own confidence slipping. Unless he is an uncommon philosopher or a great egotist, when they fail to trust him he begins to distrust himself. Nor can he have the old earnest sympathy for and interest in a patient who, he knows, may without warning take the midnight train for Clinicville or call in a six-months' abortive spawn of the School of Chiropractic.

MALIGNANCY INFECTION VERSUS HEREDITY

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Some experimenters dispute the theory of infection on the basis of the late Dr. Senn's experiment. As I understand it, Senn took a piece of gland tissue containing malignant tissue

and implanted it in his arm—a small nodule appeared after two weeks and rapidly disappeared. Well, there are two ways of explaining this failure to produce cancer; one is a religious and the other a scientific. You know Senn did a great work on this earth, and God might have given him an unusual protection because he wanted him to continue his work a little while longer, but a scientific explanation is necessary, though it amounts to the same thing.

In the first place we know that the glands are protective bodies, and no doubt take part in making antitoxin. We know the first thing nature does when a foreign body is introduced is to excite an inflammatory reaction and form a protective granulation tissue around the foreign body. This apparently happened in Dr. Senn's arm when a little nodule appeared. Inasmuch as this man was exposed to all types of infection in his professional career he probably at many different times had mild infections of which he was not even aware, which created a high grade immunity. This high grade immunity added reinforcements to the immune producing power of the foreign gland tissue introduced, and because the organisms were hooked up in a foreign tissue, they were killed immediately and the gland suffered the fate of a transplanted gland by being absorbed and his immunity was still further increased. This experiment was performed once on one man, not on hundreds, and as yet my organism hasn't yet been fed to any man.

This experiment of Dr. Senn ought to make the surgeons sit up and take notice. Why are they removing the glands? If these are antitoxin producing bodies, why deprive the patients of what little protection they have? Of course, you understand I don't mean glands that have tumors as large as an egg, in which the gland tissue has been totally destroyed; I mean just slightly enlarged glands. Some fifteen or twenty years ago, you will recall it was very popular to remove tuberculous glands, but apparently surgeons have discovered it wasn't a good idea, because today it is passe. If the disease is a general blood disease, you can readily see the infection spreading by way of the glands is out of the question.

If malignancy is not infectious, why do the patients run a temperature which is suggestive? I have looked over the temperature charts of old cases at Mary Thompson Hospital, over thirty-five in number, and practically all of them show a slight subnormal temperature, occurring approximately every third to the sixth day, frequently preceded or followed by a slight rise. This conforms to one phase of the organism which I have described, because in culture media it breeds out from the 3rd to the 6th day.

Checking on Van Hoosen's work with emetine, I have added to cultures before sterilization various drugs including mercury, different salts of quinine and arsenic as well as emetine, and emetine alone prohibited the growth. Van Hoosen has shown by taking sections of the malignant growth from living patients after the administration of emetine, at various times, the different changes in the tumor tissue. The first change is a constantly increasing edema of the cells which gradually loose the earmarks of malignant tissue, liquefaction necrosis, with round cell and connective tissue generating at the edge of the tumor and trying to invade the mass.

Is malignancy hereditary? There is no reason why it can't be, but the fact that malignant growths occur chiefly in middle and late adult life or real youth, and the disease is of limited duration would seem to eliminate that phase. Of course, we can't expect to be a child of our father and mother, and have cells that resemble somebody in middle Africa. If their cells are so constituted that they allow easy entry of certain organisms, we may have the same type of cells, with a similar chemical makeup.

It must be remembered, too, that there seems to be a change in the age to the different types of malignancy, or we are making more accurate diagnoses. While pathologist at Mary Thompson Hospital I recall at least seven cases of sarcoma occurring in patients ranging from 40 to 70 years.

Considering heredity from the standpoint of Miss Slye's work, we must realize first, that she is working on animals whose normal life is very short as compared to human life—moreover, that rats and mice breed a great many times during one year, which, of course, would increase the transmission of disease if infectious. Nobody will dispute that a syphilitic father or mother suffering from an active infection, can give their offspring syphilis, yet, who will say that syphilis is not infectious. Nobody will argue that if the parents are under treatment the children may possibly escape infection to all clinical appear-

ances. Then, too, we must not overlook the fact that the cancer transplanted in these rats or mice came from a human being—a tissue foreign to them—and the animal may have the power to build up a granulation wall around the transplant, and there is automatically established a tolerance or immunity in the animal which allows that organism to grow without producing immediate death, and that strain of animals acquires a hereditary disease which eventually kills it, but allows breeding and transmission to succeeding generations before death takes place.

If I recall it correctly I believe I read in Miss Slye's article a statement to the effect that when a noncancerous strain of mice or rats is bred with a cancerous strain, the first generation from these two animals escape the disease—here again the question of immunity enters, the immunity of the noncancerous parent may be able to protect the first generation.

Why do not the various treatments cure cancer, when they all tend to improve temporarily? It is a pretty hard propositoin to tell where the original atrium of infection was. Clinically, we recognize the primary tumor as the point at which the patient's attention was first attracted to an abnormal condition—a tumor mass is only the reaction of the tissue trying to combat an infection—the real primary point of infection may be insignificant or obscure, so these remedies can be applied only at the visible points of infection. The x-ray and radium, if used too strong, may burn healthy tissue, moreover they do not neutralize the toxine, and it is the toxine and not the physical presence of the organisms that kill. The same holds true of Colle's serum. Surgery removes the tissue mass, but does not take the infection out of the blood or remove obscure unknown metastases.

Emetine is the most hopeful drug we have, and yet in advanced cases it is only palliative, it eliminates pain and odor. The emetine not only kills the organisms in the tumor mass, but in every metastase in the body. It eliminates the tumor cells where a knife can't be used without doing a particle of injury to the normal cells. In slightly enlarged glands it will remove the infection without destroying the normal gland tissue which may be of inestimable use in creating an antitoxin to combat the toxine. It is ideal in malignancy of the eye, brain, throat, tongue and larynx, where it is impossible to remove growths without crippling the patients, and has the advantage over the ray treatment because it relieves the pain without producing additional pains of burns. It can be used in conjunction with all the modern ideas of treating malignancy, i.e., surgery, x-ray and radium. When administered before an operaton it makes the process of removing the tumor mass much easier. It must be used in rational doses: the condition of the patient, location of the tumor, etc., and the judgment of the doctor must govern the dosage.

I believe that as soon as we have an anti-toxin, emetine and an antitoxin will be the cure, but the disease must be diagnosed before we have a well defined tissue lesion; after that, the lesion will of necessity require surgery plus the emetine and antitoxin. Furthermore, I believe when we have found an antitoxin, the profession must assume an attitude of patience, because we can't expect to cure a disease of this type in an instantaneous manner—nature doesn't work along these lines, she requires more time to build up defects than to break down; and we can't expect such rapid results as we are now getting in diphtheria. As you know diphtheritic patients frequently have positive throat culture for months following an attack which has cleared up clinically, and even in the face of a clinical cure the patient will have to have periodic examination and treatment in order to be sure the organism *is* routed.

UROLOGIC PROBLEMS AND DIAGNOSIS*

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The science of urology can scarcely be said to have existed prior to the invention and perfection of the cystoscope some thirty odd years ago, and it is only twenty years since the American Urological Association came into existence; so urology might well be called the baby of the medical science family, and yet no branch of medicine has made greater progress in the past two decades, until today all of the larger hospitals have well-equipped urological departments.

As to the frequency of urologic pathology it is only necessary to cite a few facts and instances without entering the boredom of statistics. During 1920 in one of our largest clinical centers,

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one patient out of every ten that entered the institution for diagnosis or treatment was submitted to a cystoscopic examination and in four per cent. of the cases coming to operation some operative procedure on the genito-urinary tract was found necessary. That twenty per cent. of men past fifty years of age and thirty-three past sixty show some evidence of prostatic hypertrophy, and that in a considerable number—twenty-eight per cent. of those coming to operation at one institution—were found to have crossed the border line from simple hypertrophy to malignancy.

Much of the urologic examination is so simple that it is often overlooked for the more complicated and elaborate tests. Turbidity of the urine is frequently overlooked unless the patient's attention is directed to the bladder by pain or frequency of urination. Cloudiness due to urates clears on boiling; when due to phosphates, acetic acid dissolves them, and a few drops of caustic soda solution produces a stringy mass when pus is present.

The well-lubricated gloved finger in the rectum of a male patient, frequently gives information the value of which is out of all proportion to the time and effort consumed in making the examination. The seminal vesicles, although not infrequently the etilogical factor in obscure toxemias and arthritic conditions, seldom receive the attention they deserve. The following case illustrates the above point and I believe is worth reporting, not because it is so extremely unusual, but because such cases are not infrequent:

A. W., aged 38 years, was referred to me Aug. 7, 1922, by Dr. J. A. Green, for a urologic examination. The present complaint is rheumatoid pains which shift from one region of the body to another; feels generally run down and is unable to work with customary vigor. Is subject to colds and during these attacks has discomfort and pain in the region of the perineum. Patient thinks the pains are in the prostate; there is dysuria and the lips of the meatus are frequently stuck together in the morning.

Past history: had a specific urethritis eighteen years ago (1904), which lasted for about a year and later returned; had a right sided epididymitis at this time. About eight years ago first began to have rheumatoid pains for the relief of which a tonsillectomy was performed but without results; later most of the teeth were extracted in an effort to eradicate the infection and following this the appendix was removed, but without benefiting the rheumatic condition.

Examination showed a poorly nourished male adult, height five feet and eleven inches, weight 136 lbs. The urine was clear with many heavy shreds. The urethra was of normal caliber and free from any evidence of stricture. The right epididymis showed evidence of a previous infection. The prostate was of normal size but of doughy consistency. The right seminal vesicle was replaced by a firm mass which was continuous with the prostate, the left vesicle was normal to palpatation. The expressed seminal secretion was practically pure pus, it being impossible to count the pus cells per field, they were so numerous. On Sept. 6, after one month's treatment for the vesiculitis, the patient reports a marked improvement with an increase in appetite and weight.

The finger and the miscroscope are the only instruments required in the examination and the finger frequently supplies the instrument of choice in the treatment of both the seminal vesicles and the prostate gland.

Palpation except where there is excessive fat will reveal kidney ptosis, the writer recently seeing a case in which the kidney could be displaced into the pelvis, yet on account of the pain in the hepatic region and associated gasro-intestinal symptoms a diagnosis of gall stones has been made repeatedly.

While text-books still consider cystitis as an entity, yet in the vast majority of cases of persistent or recurring bladder inflammation it is merely a symptom of a diseased condition in some other portion of the genito-urinary tract and should be considered in that light instead of wasting valuable time with urinary antiseptics. "Tuberculosis of the kidney should be suspected in every case of cystitis, especially in a young person, when not due to stricture or stone and does not immediately clear up on bladder washing; this suspicion becomes stronger if the condition becomes aggravated by irrigation with silver nitrate." (Morton.)

The following case well illustrates the point that cystitis is a symptom and not a disease entity:

Mrs. A., aged 32 years, examined Aug. 30, 1922. The condensed history is as follows: Had always been in good health up to two and a half years ago, at which time she began to have bearing down pains when walking, followed by tenderness and pain in the bladder region with extreme dysuria, passed a great deal of pus and large blood clots. Was unable to work for two and a half months during the summer of 1921. Ever since the onset there have been recurring attacks of dysuria and bladder pain at which time she would pass pus and blood. For two weeks prior to the examination she had had a

temperature which varied from 101 to 103 with a corresponding pulse. Four ounces of urine drawn through the sheath of the cystoscope, on standing, showed fully one-half ounce of pus, which was negative for the tubercle bacillus. On cystoscopy there was an intense inflammation of the bladder mucosa, while on the posterior bladder wall was the gaping orfice of a diverticulum which had become converted into a suppurating pouch. This patient had suffered for two and a half years and consumed great quantities of medicine for a cystitis which was merely the manifestation of a diverticulitis.

The harm that may follow the diagnosis of cystitis cannot be overestimated; if it is due to a tuberculosis the primary focus may progress beyond the point where a cure is possible, also in cases where the infecting organism is of less virulence than the tubercle bacillus, there is a possibility of an extension of the infection to neighboring organs with disastrous results, as a case now under observation well illustrates.

V. J. C., aged 37 years, height five feet, ten inches. Weight July 1, 1922, was 115 pounds. Normal weight, 130 to 140 pounds. Was first seen Sept. 6, 1922, at which time he had a temperature of 102 degrees F. and a decided toxic appearance; the history showed that the temperature was of ten days' duration.

He gave the following history: Is a widower, with one child, wife died in July, 1920, with tuberculosis. He had always been well up to about the middle of March, 1922, at which time he began to have trouble with hemorrhoids and a rectal fissure. In April he had an acute retention which was relieved by manipulation, without the use of a catheter. Was operated on May 7, 1922, for the rectal trouble and the operation was followed by stricture of the rectum, for the relief of which a second operation was performed July 8, 1922. One week after leaving the hospital following the second operation he developed a right sided epididymitis which lasted for about a week. Has trouble starting the stream; there is no dribbling; is up once or twice at night. Stream is of good caliber after once started but may have to walk around to start it. Has passed some sand or gravel. Passes no blood; there is a pus discharge from the uretha. Denies any specific infection. Rectal examination showed the prostate to be enlarged and boggy; the enlargement of the lateral lobes is moderate while that of the median lobe is very marked. The seminal vesicles form a large mass which is intimately adherent to the prostate. The expressed prostatic and seminal secretion is pure pus which is negative for tubercle bacillus and gonococcus, but showed a Gram positive encapsulated diplococcus, which is morphologically a pneumococcus.

Cystoscopic examination: Indigocarmine was eliminated from both kidneys in six and a half minutes. The base of the bladder and trigone showed a very marked inflammation of the mucosa and that covering the vesicle sphincter is of irregular and broken appearance. Numerous small vesical calculi are present. Through the cystoscope the lateral lobes of the prostate showed a moderate enlargement, while the median lobe was markedly enlarged, causing a bulging of the base of the bladder with a corresponding depression further posterior.

The probable sequence of events in this case is as follows: There were vesical calculi which caused the acute retention in April. This was followed by an incomplete emptying of the bladder with the resulting decomposition of the retained urine and bladder infection (Cystitis), which while his immunity was good he was able to combat in a satisfactory manner, but the two operations for the rectal trouble broke down his resistance sufficiently to allow the bladder infection to extend to the prostate, seminal vesicles and epididymis with the resulting toxemia.

It is interesting to note in connection with this case, that immediately following the massage of the prostate and vesicles, for diagnostic purposes, the temperature returned to normal and remained normal except for a single sharp rise following the cystoscopic examination.

In considering hematuria, the day is long past when it is permissible to treat symptoms, and blood in the urine whether in large or small amounts is a sign well worth heeding before it is too late for the application of curative treatment. It is quite necessary to determine, first, from what portion of the urinary the blood comes and, second, the pathological condition that is responsible for the hemorrhage, it being present in 64 per cent. and the first symptom in 47 per cent. of malignant tumors of the kidney as reported by the Mayo Clinic.

In considering the lesions that offer the greatest possibility of error, perhaps none are more fruitful than stone in the ureter or kidney, for even the most skilled roentologist is unable to state positively that a shadow in the line of the ureter is produced by a stone or by a phlebolite which may be some distance from the particular ureter under observation; this possibility of error may be eliminated by first passing an x-ray catheter to the kidney pelvis or point of obstruction and then taking steroscopic views, which will locate a shadow with an exact nicety. O'Neil maintains that twenty-five per cent. of the patients with ureteral calculi coming to operation at the Massachusetts General Hospital had previously had operations for appendicitis or other abdominal conditions without relief.

Searching for a vesical calculus with a metal

sound or stone searcher even in the hands of the skillful leaves considerable room for error, when a few minutes' observation through a cystoscope eliminates all doubt.

In no field of medicine is it more desirable to properly interpret the early signs and symptoms. A tubercular cystitis usually means a tubercular kidney, which if left untreated leads to an agonizing death, while an analysis of stactistics shows that seventy-five per cent. of the patients with tuberculosis of the kidney may be saved by an early operation before the involvement of the second kidney. Even if lesions are demonstrable in the lungs life may be prolonged. Bladder tumors that are benign and so successfully treated with the high frequency spark are very prone to become malignant and then offer the same gloomy prognosis that malignancy elsewhere does.

The hypernephroma will usually emit warning signs before it becomes inoperable, but procrastination gives it a big mortality. Braasch of the Mayo Clinic states that in malignancy of the kidney, patients well at the end of a three-year period had had symptoms for an average period of 1.6 years before applying for treatment, while those living less than three years after operation showed an average duration of symptoms of 2.8 years.

The x-ray is indispensable in urologic diagnosis. Not only can stones in the ureters and kidneys be accurately located but the pyelogram is frequently the most accurate means of diagnosing kidney tumors, as a renal tumor of any size will practically always show some alteration in shape or size of the kidney pelvis, while an opaque catheter will demonstrate the exact degree of kidney ptosis. Of less importance in the diagnosis of bladder stones is the pneumocystogram, it being possible in many cases to demonstrate a bladder stone with the x-ray.

The cystoscope is to the genito-urinary tract what the stethoscope is to the chest or the ophthalmoscope is to the eye. By its use the various pathological conditions of the bladder may be recognized and not infrequently the localization of a bladder lesion properly interpreted will locate a diseased kidney. Enlargements of tumors of the prostate and pathological conditions of the posterior urethra are made visible as are encroachments on the bladder by tumors of neighboring organs. The rhythmical contractions of the ureteral orfices with the corresponding ejection of urine are easily discernible and when a considerable quantity of pus is present the offending kidney may be located by inspection alone. By catherization of the ureters the urine of the kidneys may be collected separately and even minute quantities of pus or blood traced to its source. The placing of a catheter in the ureter as a preoperative precaution in cases of extensive pelvic operative procedures, if done as a routine measure, would prevent many accidents and save not a few kidneys. As an instrument of treatment the cystoscope has revolutionized bladder surgery, whereas bladder papilloma by the open method of treatment was productive of a certain operative mortality and a high rate of recurrence either in the bladder or in the scar, by the use of the Oudin or D'Arsonval spark through the cystoscope the operative mortality is eliminated, recurrence is much less frequent and when the latter does occur it is a simple matter to give another treatment or two, this being an office procedure in many cases.

Lavage of the renal pelvis in pyelitis may save the parenchyma by preventing an extension of the infection and in pathological conditions due to back pressure as kinks or strictures of the ureter, drainage of the kidney pelvis through the ureteral catheter is of considerable service, the catheter also acting as a dilator.

The kidney functional tests have been directly responsible for the great lowering of the operative mortality in urologic surgery and by many urologists are considered of greater importance than operative dexterity. Indigo-carmine possibly ranks first as a test substance, being nontoxic and nonirritating whether injected intravenously or intramuscularly, the elimination beginning in five to ten minutes and continuing over a three-hour period, the only requirements for the test being an empty bladder to start with and the collection of the urine at regular periods and finally the determination of the amount of dye excreted, by the use of the colorimeter. In cases where a larger amount of dye is eliminated during the third than during the first hour, the case is said to be in the negative phase (Thomas), and any major operative procedure on the genito-urinary tract is contraindicated, the kidneys under those conditions being unable to stand any additional strain. If by appropriate treatment the kidney function can be stabilized and the dye is eliminated in greater quantities the first

than the third hour, five to one being the normal ratio, the case is then said to be in the positive phase and operative work may be undertaken without the fear of a postoperative uremia.

As a unilateral functional kidney test, either for diagnostic purposes or as a preoperative determination of kidney stability, chromo-ureteroscopy is the procedure par excellence and should be made use of before operation is undertaken upon the kidney; with the cystoscope in position the dye is injected intravenously and the time of injection noted. In functionally sufficient kidneys (this does not necessarily mean that the kidneys are normal) the elimination will begin in five to seven minutes, ten minutes being the normal limit and where the time of onset of elimination is delayed beyond the normal limit an operation the nature of a nephrectomy on the opposite kidney is contraindicated.

Phenolsulphophthalein as a functional test substance has the advantage of being smaller in bulk per dose and in having a larger quantity eliminated, the disadvantage being the necessity of an alkaline medium to produce color which renders it unfit for chromo-ureteroscopy.

The blood tests for the products of retention, urea nitrogen, total nonprotein nitrogen and creatinin require a well-equipped laboratory and there is always a greater possibility of error when so complicated a technique is required, also under certain conditions as yet not well understood, with functionally insufficient kidneys the human mechanism may so adjust itself that the tests of retention will fall within the normal limits and yet operative work is not permissible.

THE FIRST DAILY HOSPITAL CLINIC IN AMERICA FOR PRIVATE PATIENTS

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In the early days of the history of our country, the only people who went to hospitals were charity patients. The hospitals were municipal, county or state institutions, and no one, though ever so poor, who could in any way provide shelter, food and caretaker would apply for admission. To go to a hospital in those days was not only a disgrace, but a gamble with misfortune and death. Gradually hospitals for people who were able to pay were built, prejudice was eventually overcome, and now those in moderate circumstances as well as the wealthy realize the benefit of hospitalization both for diagnosis and treatment.

In the olden days the charity patients in the hospitals of the commonwealth furnished clinical material for teaching purposes. The opprobrium associated with the old time hospital unfortunately still clings to the idea of utilizing private patients for clinical instruction. A few brave pioneer souls (like the Mayos) have had the courage and the good sense to present to the doctors for clinical study the large number of patients who seek help at their institution. The people who patronize institutions of that kind realize the benefit to themselves of such a proceeding.

When we graduated in medicine, most of us were imbued with the delusion that aside from our favorite professors and others who had gained prominence, no one except ourselves was modernly equipped to practice medicine. From our narrow viewpoint the great army of unknown general practitioners were either hopelessly behind the times or out-and-out ignoramuses. The graduates of today have the same views. When they enter upon their duties in small hospitals, their airs are superior and their contempt for the abilities of the attending men is not always repressed with a politeness that makes it unnoticeable.

The demand for internes who have received their medical education in first class schools of medicine is such that hospitals must be able to present an attractive service if these young men are to give their time and labor in this very necessary apprenticeship. The large hospital, whether or not it is connected with a teaching institution, is sought for this service by recent graduates for several reasons:

1. Because they believe that the prominence of the large hospital will give them greater prestige when they go out into practice.
2. From the number of patients treated they expect to gain a more extensive experience.
3. The eminence and ability of the hospital staff makes a strong appeal.

These are all valid reasons and work to the mutual advantage of hospital and student. Such hospitals are in a position to accept only the most energetic and best qualified graduates. If those selected do not prove themselves able to maintain a high pressure standard of work, or

fail in their personality, they are promptly supplanted by others on the waiting list for these desirable appointments. This state of affairs makes it possible for the attending physicians of the hospitals to enforce a discipline that is military in character, and obtain from the internes an amount of work that is hardly possible for smaller hospitals.

When a student I observed the working of the large hospital connected with the medical school. I saw the wonderful system it had evolved for the study of patients in order to insure a correct diagnosis. I noted the equipment and the trained workers for the care of the sick. Eagerly I looked forward to the time when I might send my patients to this institution and have at my command its wonderful resources for the establishment of correct diagnosis.

After I received my state license permitting me to practice medicine, a patient came who needed hospital care. He was able and willing to pay a moderate fee and a moderate hospital bill but he did not feel able to pay for a private room. I went to the hospital and asked for a bed in a ward. I was assured that the bed was available, that the patient would be received and assigned to one of the hospital staff who would attend him and collect the fee. The act struck me as both unfair and un-American. When I inquired into the cause of this monopoly I was given many reasons for its existence which did not seem satisfactory at that time and which I still believe untrue.

Being barred from this model of the best in the way of a hospital, my only recourse was to take my patient to one of the smaller institutions that had not been favored by contributions and endowments that made possible the closed door policy. In most of these no fault could be found with the care and attention given the patient. Their facilities for studies in diagnosis were, however, sadly lacking and if the staffs were interested in the scientific study of cases, that interest was not made apparent by any move on their part for any concerted action which would make possible the same opportunities for exhaustive diagnostic studies that maintained in the large teaching institutions.

Somewhere the idea had been proclaimed that only those patients who were unable to pay were available for teaching purposes. No argument against this mistaken idea that I might make will refute it more completely than the fact, well established and well known, that people under the guise of poverty but well able to pay from moderate to good fees avail themselves of this golden opportunity to obtain medical and surgical service free of charge.

The value of clinical teaching both to patient and physician has long been known but the timidity of doctors is one of the causes of its non-use when charity cases are not to be had.

About the first of May, 1920, there was inaugurated at the Norwegian American Hospital a series of daily clinics for private patients.

The Norwegian American Hospital is an institution having 125 beds. There is no free dispensary in connection with it and before the above. date it had no teaching facilities other than the training school for nurses. It has only such charity patients as might be supported by church or other organizations who see fit to pay in part, at least, for hospital care. With one or two exceptions, the physicians who send patients to the hospital are general practitioners, many of whom do their own surgery unless it is a case that requires the technical skill acquired by daily, continuous operating.

When the idea of holding daily a clinic at the Norwegian American Hospital at which any doctor having a case in the hospital would have the privilege of presenting and giving the lecture was broached, it met with an emphatic denial of its possibility by the members of the attending and visiting staff.

It was pointed out to the staff that a daily clinic would furnish a post graduate course that would serve to keep the attending and visiting physicians in touch with the progress of medicine; that it would make them more alert to the needs of their patients; that it would be the means of arousing them to the necessity of routine and careful examinations: that it would cause them to avail themselves of the opportunity offered by the x-ray and clinical laboratory; that it would teach them as nothing else could that the glibness of the "Professor" in presenting cases is not a great and especial gift, but the result of constant, intensive study and repeated effort; that in addition to the clinics given by the physicians who had patients at the hospital, it would be the plan to invite prominent clinicians from the medical schools to appear at frequent intervals. These arguments and the difficulty of

obtaining internes finally won enough support from some of the more influential members to give it a trial. It has now been in existence for over two years and has been held every day during that period with the exceptions of Sundays and holidays. With few exceptions, the physicians who talk at these daily sessions have had no experience as teachers in the medical schools. The patients presented are those in our private practice. From time to time the most eminent teachers in the medical profession appear before the clinic and add much to its value by reason of their greater abilities as teachers.

Coincident with the establishment of the clinic, the hospital trustees installed at considerable expense a clinical laboratory, and, what was more important, placed in charge of it a competent and well trained physician who is able to render any service that a clinical laboratory is expected to give.

What has been accomplished?

1. A post graduate course in all branches of medicine and surgery which is not surpassed by anything in the city.

2. It compels the doctor presenting the case to study his subject and systematize his knowledge in a manner that is never done in his daily routine of private practice.

3. It tends to create among his fellow physicians a due and just respect for a knowledge, that because of lack of opportunity of displaying, they were not aware of his possessing.

4. The impetus it has given for careful and elaborate studies in diagnosis have made it possible for the hospital to maintain a clinical and x-ray laboratory that could not be operated without the support of the attending physician.

5. Other hospitals have followed suit and are holding clinics weekly or monthly, which is better than no clinics at all.

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FOLLICULAR EYE AFFECTIONS IN CHILDREN*

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If you should deem it necessary that an explanation be made for my bringing this subject before you, I would point to the fact that the membership of this society is made up of medical men from the counties of Egypt, state of Illinois, where there is such a prevalence of these affections that any discussion of the same should immediately rivet their attention. Therefore, the problem involved in the care of these cases is a home problem to every one present. Furthermore, there has arisen out of a discussion of this subject so many heated controversies in the various medical societies of the country, and so many various opposing opinions, both as to diagnosis and curative procedure, have been presented that it may fairly be considered, in some of its aspects, a mooted question. In these statements my mind reverts to the antagonism among many oculists of the country to the radical procedures of the various trachoma experts sent out by our State and National departments of public health. Should a further reason than the prevalence of these diseases for presenting the subject for your consideration be desired, I would state that we have had the problem of caring for these affections among school children presented so forcibly to our local school board, city and county health officers, and us three local physicians that give especial attention to eye diseases that we have been constrained to adopt radical methods, as it were, to bring about its solution. Some of you present probably noticed a few years ago what Dr. White, of the U. S. Public Health Service, said in an article published in a number of special journals on the subject of prevalence of trachoma in our own Egypt. Among other things, he said he had been informed that this disease was so common in this town that the conductors on our railroad trains passing through here were wont to call out "Trachoma" instead of "Cairo." The doctor's facetious statement is the first knowledge we who live here ever had of this matter, and an investigation has proven that he alone ever had any information that this was the habit of railroad men. Therefore, we deny the correctness of the statement. However, mixed with numerous cases of school folliculosis among our school children we found enough cases of true trachoma to make it desirable that we take active measures for the suppression of the same. Therefore, our experience may be helpful to others.

It is quite possible many of you will consider it a mistake in classification to include under one heading two such separate and distinct diseases as trachoma and school folliculosis. My

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reason for doing so is not based on sympathy for the teaching of some authorities that the latter is a milder form of the former, but upon the fact that the two diseases are often found in the same locality, are frequently indistinguishable from each other in children, and, therefore, in combination present one problem for solution.

Differential Diagnosis. This leads us naturally to the consideration of the differential diagnosis. In discussing this allow me to quote freely from Fuchs and DeSchweinitz. These two authors are selected because one is foreign and what he says will appeal to the ones present (if there be any) who always think the best comes from abroad, and the other occupies such a commanding eminence in our profession that what he says will be accepted without question. Says Fuchs: "The two diseases are very similar in that lymph follicles occur as characteristic formations in both. In folliculosis they are smaller, are more sharply limited, and project above the surface of the conjunctiva. In trachoma they are large, destitute of sharp outlines, and less prominent. Follicles proper are often oblong-oval and placed side by side, in rows like strings of pearls, while trachomatous granulations are round and more rarely present any arrangements in rows. But these characteristics are sometimes so obscured that even experts cannot, in many cases, make the diagnosis with certainty, and the subsequent course of the disease alone furnishes the desired information. Even in the histological structure no thorough-going distinction can be found between follicles and trachomatous granulations." Let us quote now from DeSchweinitz: "Much difference of opinion exists as to whether or not folliculosis should be placed in a separate category from trachoma, or whether it should be regarded as an early stage of the latter disease. Although transitional forms apparently exist, the evidence, clinically at least, warrants the belief that this affection is distinct from granular lids, because folliculosis occurs where trachoma is unknown, and because the follicles disappear without leaving a trace of their existence or producing scar tissue in the conjunctiva. Histologically, however, there is no decisive difference between fresh follicles and fresh trachoma bodies." Of course, these men are discussing acute and border-line cases in these statements. In many cases the differential diagnosis is easy, especially those that have been running a sufficient length of time for the sequelae of trachoma to result in the absorption of the normal conjunctiva, the formation of cicatricaial tissue, pannus and ulceration of the cornea. Sometimes the difficulty of distinguishing between the two diseases reminds me of the difference between tweedle-dum and tweedle-dee—the difference is in the ending; or of the old rule for determining whether the young canary bird is a male or a female. The directions for applying this rule are: "Put a worm before the birdling, and if *he* eats it, it's a he, but if *she* doesn't eat it, it's a she." The application is that if these cases are left alone and trachomatous complications arise, it is trachoma, but if they cure up without any damage to the eye, it is folliculosis.

But this waiting for consequences is fraught with too much danger. It seems to me far better to follow the advice of Fuchs, who, in his book, states in the paragraph following the one from which the above quotation was taken: "If a physician in any case is doubtful whether he is dealing with trachoma or folliculosis he must denote the case as suspected trachoma, take steps to prevent the spread of the disease and institute treatment."

Regardless of the fact, however, that in a large percentage of cases a correct diagnosis cannot be made macroscopically nor microscopically, nevertheless, they are two distinct diseases. To illustrate: We have a disease called membranous rhinitis. Our authorities say it may be caused by the Klebs-Löffler bacillus, or by other bacteria. Macroscopically and clinically there may be no distinction, but by the microscope we diagnose the one as diphtheria and the other as simply membranous rhinitis. Reverting to trachoma, and being not unmindful of certain claims about trachoma bodies, it must be admitted that we are not yet able to diagnose this disease by a microscopic examination. It appears to me, however, the difference between the two diseases under discussion is based upon the causative agents. The agents causing folliculosis (for there are probably several kinds of bacteria that cause it) invade the tissues, the follicles are formed as a result of this invasion, their presence is not strongly resented by the body cells, therefore there is very little irritation, and consequently, no absorption of normal tissue and no formation of cicatricial tissue. In the course of time, the body cells destroy the morbific agents and the

follicles disappear leaving the integrity of all the tissues of the eye unimpaired. Not so, however, in the case of trachoma. Here the agent, whatever it is, has higher resistance and produces greater irritation, so that, while the beginning is very much like the pathological process in the other disease, the continuation and the results are entirely different. If this speculation is correct, when the cause of trachoma is discovered we then will be able to distinguish early in all attacks whether each case is the one disease or the other—and not till them.

Contagiousness. The next practical point that appeals to us in these cases is the question of contagiousness. As to trachoma, all authorities agree that it is highly so in its acute, suppurating stages, that is, that the cause of the disease is in the pus and can be transferred by the transfer of that pus to another eye. As a corollary, the non-suppurating cases are not contagious. Turning to folliculosis, the authorities all agree that there is an acute form of this disease that is as highly contagious as acute trachoma. We experienced such an outbreak in our own midst last fall. It was not confined to children alone, and had the appearance of the so-called "pink eye" till the lids were everted, when the characteristic appearance of acute folliculosis was then revealed. My belief is that the contagiousness of this trouble decreases as we proceed toward the non-suppurating form in almost the same ratio as in granular lids. We probably have, therefore, learned to look upon folliculosis as being noncontagious because we see so many cases of the non-suppurating kind.

THE PHYSICIAN'S DUTY

These remarks bring us logically to the question of the duty of the physician in the matter. Here we have one disease that, while it is considered harmless to the integrity of the eye, is a handicap to the child in its studies, which may cause it to become a menace to other children, and has, in most localities, no doubt, mixed up with it a certain percentage of that dread disease trachoma. Will anyone say that it should not be eradicated?

The Procedure to Adopt. Leaving out the question of the duty of the school authorities and that of the county and city officials, also the duty of physicians to enlighten these people wherever it needs to be done to get them to take an active interest in the matter, we come to consider the question of treatment. This at once divides itself into operative procedures and medicinal treatment. It is generally admitted by eye specialist that the operation of expression in trachoma in a suitable case and stage of the disease does more good than anything else. To my mind, however, the profession generally does not use this step in the treatment of this disease often enough, nor give it credit for half the good it can accomplish. In 1903, before the section on Ophthalmology of the A. M. A., at New Orleans, I advocated a more frequent use of this operation in trachoma. These points were urged by me: That it ruptured the trachoma granules and thus cut short the morbid process, that it broke down the cells of new cicatricial tissue in formation thus causing its absorption, that it provoked an acute mildly suppurating conjunctivitis that made a favorable impression on any pannus or ulceration of the cornea. Experience since then has confirmed me in my contentions of that date. Therefore, in these cases of suspected trachoma we should practice expression, following it with medicinal treatment. This will cure them much more quickly than any other procedure. As to simple folliculosis, medical treatment, along with correction of refractive errors, attention to general health and proper care of the child's nose and throat whenever necessary, will cure after awhile. Some of these cases, however, prove so stubborn, the condition is such a handicap to the child in its studies, and is such a menace to the other children, that the follicles had better be expressed.

In these cases, however, and in many cases of trachoma, the roller forceps is not the proper instrument with which to operate. It causes an unnecessary amount of traumatism. A simple forceps with which the everted lid may be firmly squeezed is sufficient. The follicles are soft and easily broken down, so that if the work is done simply by expressing, and not by stripping, there will be no perceptible scarring of the under surface of the lid resulting.

Our Experience in Cairo. We come now to the relation of our experience in Cairo and the results, so that you gentlemen present can get the benefit of whatever lessons we have learned. Prior to 1919, nothing like a concerted effort was made to eradicate these affections. We men who were then here treating eye diseases had many cases to deal with in our private practice, but it

was difficult to bring about a cure for the simple reason that the disease was not taken seriously enough by the parents, in many cases, to allow an expression operation, or to have treatment continued long enough to effect a cure. There was no school nurse and no regulation that excluded the children from school till cured. That we had quite a number of cases of genuine trachoma to deal with was evidenced by the fact that all the sequelae of that disease followed. A case in point is a 14-year-old girl now in the school for the blind, at Jacksonville, whose corneae are so scarred by this disease that she had to be sent there for her education. In the summer of 1919, however, the Associated Charities of the city, our school board, especially the medical man of the board, and our city health officer began to take a keen interest in the question. As a result of the agitation and subsequent negotiations between the president of the Associated Charities and us local oculists, a free clinic was established during the month of August at St. Mary's Infirmary for the care of these cases. Altogether 110 sufferers were found by the school nurse among our school children. Fifty-six of these were operated upon with the result that all were cured promptly with the exception of two or three who had to have further attention the following summer. The outcome of this was that the nurse at the opening of school in 1920 could find only 67 cases. Most of these were taken up and cured by operation or treatment, or both, but a few slipped through our fingers. In 1921 70 cases were found. These were looked after. This year so far (and the inspection is about completed) only 12 cases have been listed, and these entirely among the little fellows who have entered school only this year, and who, therefore, have just had their first inspection. Thus you see how nearly we have come to eradicating completely these diseases from the eyes of our school children. Of course we will not be able to get rid of them entirely because our school nurse cannot be authorized to go into the homes of the parents and inspect those below school age,—and I might add that, with the experience and natural acumen of our school nurse and the fine conscientiousness and professional ability of our county and city health officers, nothing of the nature of these troubles is allowed to get by.

Many of you gentlemen are acquainted with the fact that those of our profession who cry out against what they call "an unwarranted attack on the eyes of our children" will recall that they consider folliculosis as a development of lymphoid tissue in the lids, often associated with enlarged tonsils and adenoids. These men consider these latter organs legitimate prey, and proceed to operate, but cry out in holy horror at any operative measure designed to rid children's eyes of this pathological condition. Be that as it may, however, let me offer you some statistics tending to show that hypertrophied tonsils and adenoids have no influence in the etiology of this disease. Last winter a careful inspection of a number of cases gave the following results:

Number of cases in which tonsils and adenoids were negative	16
Number of case with moderate tonsils and adenoids	7
Number of cases with hypertrophied tonsils and diseased tonsils and adenoids.	4
Total	27

In other words, the tonsils and adenoids were entirely negative from the etiological standpoint in approximately sixty per cent, doubtful in twenty-five per cent., leaving only fifteen percent. in which we could be justifiably suspicious—about as high a percentage as you would probably find in cases of toothache.

To these things allow me to add a bit of experience in treating folliculosis medicinally. From the cases as they came to me last year were selected twenty-five for treatment. None of them were suspicious as to being trachoma, though some were considered a menace and were, therefore, kept from school until the discharge ceased. They were divided into mild, moderately severe, and severe cases in accordance with the exuberance of the follicles.

The results follow:

Number of mild cases	7
Number of days treated till cured, averaged	42
Average age (years)	7
Number of moderate cases	6
Number of days treated till cured, averaged	48
Average age (years)	7½
Severe cases	12
Number of days treated till cured, averaged	63
Average age (years)	8⅔

Conclusions

1. Trachoma and folliculosis are endemic in the eyes of the children of southern Illinois.

2. The two diseases are different, but it is frequently difficult, and sometimes impossible, to distinguish the one from the other.

3. Eradication of the one is demanded, and of the other justified.

4. Expression cures more promptly than treatment, and is harmless if properly applied.

Closing, gentlemen, let me say no attempt has been made to present to you a scientific paper, not because you are not known to be scientific men, but because you are practical men, and are, therefore, very deeply interested in the practical side of this question.

NOTES ON THE CARE OF THE SKIN

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The human skin is composed of two parts, the outer horn-forming layer, called the epidermis, and the dermis, or connective tissue foundation. Considered as an organ, the epidermis is the parenchyma and the dermis the stroma. Under this and really a part of it is the fat containing subcutaneous layer which furnishes an elastic pad and a flexible connection to the underlying structures. The chief function of the skin is protective and it accomplishes this by the formation of a thin, compact outer layer of horn cells, well oiled. The openings in this layer at the hair follicles and sweat pores have special stores of oil to protect against invasion from without. The upper surface of the dermis is thrown up into tiny finger-like projections over which the epidermis fits, thus forming a surface greatly exceeding the plane surface of the horny layer, making a large provision for stretching and for a large blood supply to furnish nutrition and to radiate heat. Such an elastic coat, padded in addition by the subcutaneous layer, provides an excellent protection against mechanical trauma. Its horny exterior and fatty substratum afford insulation against heat and cold and electricity, while the well greased external surface resists moisture and chemical irritants. As a protection against injury from light, the epidermis produces pigment.

One of the most important functions of the skin is its part in the regulation of heat. As already mentioned, there is considerable resistance to the direct transmission of heat thorugh the skin. When heat is to be conserved, nervous control causes the minute involuntary muscles, the erectores pili, to contract, producing an elevation of the hair follicles called "goose skin." At the same time the blood vessels contract, effectively reducing the amount of blood and the radiation of heat. When the opposite effect is required, the capillaries fill with blood, circulation is hastened, the sweat glands become active and water is rapidly evaporated from the surface of the skin. Great amounts of heat made latent in the process of evaporation can be thus rapidly carried off. The excretory action of the skin is important only as a means of getting rid of water and some slight amounts of dissolved substances, thus aiding the kidneys. Absorption by the skin is very limited, and while it is true that a small amount of fat and some drugs can be taken up by the circulation after being rubbed into the skin, the popular idea that the skin can be fed in this way is, of course, erroneous.

A healthy skin is dependent upon a healthy body, for proper nourishment cannot be obtained from poor blood. The maintenance of the general health by proper food, exercise, sleep and good habits are vital to the health of the skin. Like all other organs, however, a large allowance of endurance is made for times of special stress and most skins can withstand a great deal of hardship before showing any evidence of damage. A good mixed diet is the best for most humans. Excesses in any line should be avoided and regularity of meal times and plenty of time for proper chewing are of great importance. Late suppers are to be condemned, for three meals a day furnish plenty of work for most stomachs and they need time for rest at night. Nor should the stomach be asked to do the work for which the teeth are intended. Hurried bolting of food is a quick and certain way to injure the digestive apparatus and the injury is often shown by a sallow complexion or some definite disease of the skin. Water should be taken freely both with and between the meals. The use of well cooked meats, including fish and fowl, in moderation is not harmful except to those who have acquired

*(Foot Note) Acknowledgement must be made of the great help derived from The Care of the Skin and Hair, by Wm. Allen Pusey, Appleton and Co., 1912.

a sensitiveness to certain proteins, or who suffer from deranged proteid digestion. Badly cooked meats, or excesses, may do harm. There is very little indigestible residue in meats and an excess of them at the expense of the vegetables tends to encourage constipation. Starches and sugars in excess tend to increase the oil of greasy skins, to encourage acne and to lower resistance to infection. Coffee, tea and chocolate are constipating and interfere with digestion to a certain degree. Alcoholic drinks irritate the stomach and dilate the peripheral blood vessels, thus tending to irritate the skin, especially of the face, and are a direct causative factor in acne rosacea and some eczemas.

Elimination by the bowel is most important in the maintenance of skin health and this should be attained by proper habits and foods, not by the use of laxatives and cathartics, which irritate the gastro-intestinal tract and tend to cause constipation by making the bowel less sensitive to the normal stimuli.

Plenty of sleep at regular hours is required to maintain good health. Late hours, whether employed in excess of work or pleasure, are definitely harmful. Regular exercise, preferable in the open air, should be insisted upon, an hour a day as the minimum. Light is essential to life, but the fact that the skin is given the power to protect itself and the body against the actinic rays is a clear indication that too much light is harmful. As the result of excessive exposure to strong sunlight the skin of the face and hands is apt to become coarse and rough, and later in life may develop large freckles which often go on to the formation of senile keratoses and epitheliomata. A hat sufficiently large to protect the face should be worn in strong sunlight, and on the snow or water protection from the reflected rays may be necessary.

Local Hygiene. The bad effects of dirt upon the skin, as well as its unlovely appearance, have been recognized by man since early days. Water is not only cleansing, but has a soothing or stimulating effect, depending on its temperature. Tepid baths are soothing, hot or cold ones stimulating. For the proper exercise of the skin circulation, which is of such great importance in protecting the body against sudden changes of temperature, it is well to follow the hot cleansing bath by a short cold one. To some sensitive skins, water, especially hard water, is irritating, but this may in large part be counteracted by the use of bran, oatmeal or almond meal. A handful of bran in a gauze bag, scalded, not only prevents the irritation, but adds greatly to the cleansing action of the water. In some diseases of the skin water is harmful because of maceration. If the skin is unbroken, 50 per cent alcohol makes a good cleansing agent for these. *Soaps* are combinations of fatty acids with sodium or potassium. They have the power of dissolving fats and holding in suspension small particles of dirt. While weakly germicidal (soap-suds kills the spirocheta pallida) their chief action is in removing dirt, including pathogenic bacteria. Free alkali, which is present in all soaps until removed by a special process, is not necessary to their efficiency and should not exceed one-fourth of one per cent in toilet soaps. Superfatted soaps, in which the addition of a small percentage of wool fat has overcome entirely the action of free alkali, are the least irritating soaps. Greasy skins stand soaps well and only very dry skins need to be protected by the use of superfatted soaps or the avoidance of soap entirely. Such skins should have some oil restored after washing by the use of cold cream or of the following lotion recommended by Pusey:

Liquid petrolatum (32.0); oil of bergamot; oil of lavender āā (0.4); sodium benzoate (1.0). Mix and add powdered tragacanth (4.0); shake thoroughly and add water gradually, with shaking, to make 250.0.

When soaps cannot be used without harm, bran water may be substituted.

Except for those containing salts of mercury, bismuth or lead, *toilet powders* are not harmful, but are protective, cooling and drying. They have nothing to do with the formation of blackheads. Very dry skins are benefited by the use of a good *cold cream* after washing or in place of it. Greasy skins do not need such treatment and are harmed by it. Acute dermatitis often is made worse by soft ointments or creams, because they are too macerating, and sometimes because of fatty acids in an old preparation. The addition of 12 per cent boric acid to cold cream makes it stiffer and less liable to spoil on standing. *Massage* is of no great benefit to the skin and in cases of pustular acne and other infections, it is harmful. *Steaming the face,* either by holding it over a basin of hot water, of by the milder method of hot towels, is good as an occasional

cleansing method; but can easily be overdone, especially on tender skin. *Cupping* is of benefit in cases in which the circulation needs stimulation and in pustular acne, in which it aids the removal of pus. It may be of some value in the prevention of wrinkles. *Face masks* are of no benefit except to macerate and loosen up dirt. This can be done as well and more comfortably by the use of soap and water. *Mud packs* are just now much in vogue, being advertised as "skin laxatives." They cause a drawn sensation and a temporary flushing, and in tender skins a dermatitis. It is doubtful that these impressive applications do more than a good washing and they are much more irritating.

Antiseptics. Most antiseptics are irritating to the skin and this fact should be kept in mind in using them. The least irritating compared to their value are, in my opinion, soap and water and 50 per cent alcohol. Only the most sensitive skins are injured by a moderate use of these agents. Ninety-five per cent of alcohol is more drying and no more efficient as an antiseptic, we are told, than the dilute. Hydrogen peroxide, whether its oxygen is or is not of much value chemically, is a good cleansing agent because the gas forms under small particles of foreign bodies and loosens them. It can be used on all but the most tender surfaces, even on fresh burns, without irritation. Boric acid is of some value, especially in the form of a saturated aqueous solution, which is very seldom irritating even to acute eczema. Twelve percent boric acid in petrolatum is a good protective ointment for clean wounds such as fresh burns. Tincture of iodine is an excellent antiseptic, but care must be used in its repeated application. One coat is usually enough for a day or two, and care should be exercised that it has not become too strong by evaporation of the alcohol. Carbolic acid is not as efficient as other less irritating antiseptics and is more dangerous. Gangrene of the skin follows its use even in weak solution or in ointment, when allowed to remain in contact with the skin for any length of time. Used as an analgesic, the maximum in lotions should be one per cent. Alcohol or glycerine should be used to insure its solution in water. Used as a wet dressing, or ointment, the percentage should be even less than this. Iodoform is little used nowadays, and its waning popularity is well deserved, not only because of its vile odor, but even more on account of its tendency to cause a dermatitis.

Electricity. All forms of electricity act as stimulants to the skin, but are not largely used for treatment, except in the specialized forms, as fulguration or electrolysis.

Light. Ultra-violet rays have a powerful effect on the skin, causing either an acute dermatitis, or, after repeated mild exposures, tanning. They are of great value in diseases such as superficial lupus vulgaris and other tuberculous conditions, lupus erythematosus, alopecia areata, vascular nevi, chronic eczema and lichen simplex, psoriasis and seborrheic alopecia. They are, however, not fool-proof, can cause the same harmful changes as are produced by sunlight, and can result in distressing deep edema if overdone at a single exposure. The much-advertised effects of light from large incandescent lamps are due rather to heat than to light.

Roentgen rays and radium are very beneficial agents in the treatment of diseases of the skin and we should be crippled in our work if they were taken away from us; but they are not used with enough caution even at this late date. In the treatment of acne rosacea, acne vulgaris or psoriasis, no real erythema should ever appear. A temporary erythema occurs in some patients after even a small dose and this is of no consequence except, perhaps, to warn us that such a patient is more than usually susceptible. In sycosis, chronic eczema and lichen simplex and lichen planus an erythema is seldom necessary to success. The risk of late atrophy and telangiectasis should not be taken in these cases, though it may be wholly justified in the treatment of malignant conditions. These untoward results come on months or years after the treatment has ceased, and are due to the destructive effects upon the blood vessels. They are especially liable to follow penetrating, filtered rays.

TREATMENT OF SOME COMMON SKIN DISEASES

Sunburn. The dermatitis resulting from too strong light may be the effect, not only of direct sunlight, but also that reflected from snow or water. Soothing applications, toilet powder, boric solution or cold cream are sufficient to alleviate the distress and hasten the restoration of the skin.

Chafing. The maceration of parts where the skin in the folds of the body affords an opportunity

for irritation caused by rubbing together of these parts can be prevented by careful washing and drying of the skin in the creases, followed by liberal powdering with borated talcum. In very stout people it may be necessary to separate the parts by the use of a flat gauze bag filled with talcum powder. Sponging with alcohol is also a valuable preventive, both drying and antiseptic. This, of course, only where the skin is unbroken. If erosions are present the cleansing may be done with boric solution or oil. Cleansing followed by powdering is usually enough to cure.

Chapping. This is the mildest form of dermatitis, the reaction of tender, dry skin to the irritation of dry, cold weather, too strong soap, or inefficient drying of the skin after washing. To prevent it, the blandest soap or better none at all should be used, the skin carefully dried after washing, and a soothing lotion or cold cream applied.

Eczema and other acute dermatitis. The question of the definition of eczema is a difficult one and will not be touched; but the treatment of all forms of dermatitis is upon the same basic principles. If the irritating substance or force can be discovered, the first requisite is its elimination. In cases of exposure to irritating plants such as poison ivy, or poison sumach, a thorough application of soap and water is the first indication, and if used early may be an efficient prophylactic. If this is followed by a generous application of alcohol the action is made more certain. Even in the early stages of the eruption washing is valuable. In real eczemas, soap and water, being one of the chief irritants, are contra-indicated, and soothing applications must be used at once. Where the skin is not broken, however, weak alcohol may be used with impunity in even fairly acute eczemas, and in case it is not well borne, saturated boric acid solution may be used. For soothing an acute dermatitis, light wet dressings of cool boric solution, aluminum acetate solution diluted ten to sixteen times, or calamine lotion are the most efficient. After the first stage has passed, these may be dabbed on frequently with sufficient effect. Later zinc paste (Lassar's paste), may be thinly applied. These acute conditions do not stand soft ointments well as a rule. The latter find their place rather in the subacute dermatitis that occurs so often in too dry skins.

In all but the most acute of these cases of dermatitis, coal tar in the form of a paste, crude coal tar and zinc oxide, āā 2.0, starch and petrolatum āā 16.0, is one of the most efficient preparations. This must be removed after twelve hours by the use of oil or cold cream. Often the result is astonishingly prompt. There is a whole list of other stimulating drugs for these cases after the most acute stage has passed, of which the favorites are the various forms of tar, white precipitate and resorcin. Ultra-violet light, or Roentgen rays, may be necessary before the last vestiges disappear.

Eczematoid Ringworm resembles vesicular eczema, occurring most often on the palms and soles, especially as macerated skin between the toes. It iches intolerably at times, and in the severe cases involves all the skin of the hands and feet and extends to the arms and legs and even to the trunk and face. The fungus causing it may often be found by removing the top of the vesicle, inverting it on a slide and examining under the high dry lens. Whitfield ointment, four per cent salicylic acid and eight per cent benzoic acid in cold cream, is the most generally useful remedy, though several others may have to be used before the disease yields. The macerating action of water should be avoided as much as possible, using alcohol containing one-half to two per cent of salicylic acid for cleansing. To prevent reinfection from the shoes, formalin upon a piece of blotting paper may be placed in the shoe before it is wrapped in paper and laid aside for several days. The socks must be boiled thoroughly, or, if of silk, can be soaked in a weak solution of formalin.

Bacterial Infections. Impetigo occurs commonly in children and in men after shaving, as a vesicle upon the apparently normal skin. This is soon broken and a thin crust forms over the whole area, appearing as if stuck on. The vesicle may spread at the edge of the crust, but usually other vesicles appear wherever the infection has been carried. In spite of the rapidity with which the disease spreads, it seldom involves much more than the face and hands. The official ointment of ammoniated mercury, applied to each lesion several times daily will usually cause prompt healing. Seldom does this drug cause irritation of the skin. In susceptible persons and in young children it is better to incorporate it in zinc ointment or paste in strengths less than the official ten per cent. Sycosis of bacterial

origin is the common form of infection of the beard, and is a deep, very persistent disease. It often clears up with fair rapidity under ammoniated mercury ointment, but usually recurs. In fact, because of this great tendency to recur, it often requires more radical treatment with Roentgen rays. The good result can be obtained without causing any erythema, though epilation is necessary in some cases.

Acne vulgaris and acne rosacea are not to be classed with the infections though pustules are characteristic elements in both of them. Blackheads are accumulations of sebaceous matter in the dilated ducts of the fat glands and act as foreign bodies to which the formation of pus is the response. When the pustule is deep, it often takes many days to work its way to the surface and destroys a part of the corium during this time, forming a scar. Constipation should be corrected, sugars, an excess of starches and rich, highly flavored dishes should be eliminated from the diet, and any constitutional disorder corrected. Local treatment is the chief need, however. Thorough washing with soap and hot water is one of the most useful measures; but not of itself sufficient to cure. The greasy skins usually seen in acne patients can stand strong soaps as green soap; but acne is sometimes seen in people with dry skins, and these must be more gently treated. After cleansing, the blackheads should be removed by first loosening the horny tips, then gently expressing them. Fifty per cent alcohol is a good antiseptic for use during these operations. Hot towels should then be applied, a cold water douche after them and the face dried. Then a lotion of sulphur or resorcin or both should be allowed to dry on. Many cases will require a course of injections of bacterial suspensions, which in some cases give at least temporary relief, or a course of very mild treatments with the Roentgen ray, which is the most reliable and most lasting of all methods. Rosacea is treated in the same way locally, but the gastric disturbance is of much more direct value in the etiology. Alcohol is harmful to these patients in two ways, by direct irritation of the stomach and by dilatation of the peripheral blood vessels, increasing the reflex dilatation due to gastric irritation. The disease often occurs, however, in people who never touch alcohol, and it is important to insist on the elimination from the diet of all condiments and very hot drinks.

Herpes simplex is caused by the toxins of gastro-intestinal disturbances or of febrile attacks and is of importance only because it is disfiguring and painful and may open the way to infection. Spirits of camphor used to the point of slight irritation is useful. Painting them with strong phenol until they turn white, then neutralizing the phenol with alcohol, lessens the pain and seems to shorten the course. Canker sores in the mouth are another form of herpes, which usually yields to the application of 10 per cent silver nitrate solution. When this fails, the best remedy in my experience is a small piece of alum held against the sore until the mucous membrane is well puckered. Herpes progenitalis is the same eruption, appearing usually under a long foreskin, but sometimes on the dry portions of the genitalia. It is sometimes mistaken for an infection, and not seldom acts as an atrium for infection. Careful cleansing and powdering is usually sufficient treatment. When any of these forms of the disease recur often, an effort to find and correct the cause is indicated.

Angiomata occur sometimes during childhood, often in later life, as bright red macules or papules, from one to five millimeters in diameter, usually on the trunk or face. Less often a group of radiating dilated vessels is seen, sometimes with one of the papular tumors at its center. These are of no importance aside from the disfigurement they may cause; but sometimes occasion worry from the fear that they have something to do with cancer. Like the vascular nevi, these tumors are best treated with carbon dioxide snow or radium.

Moles are sometimes disfiguring, but of consequence only in the rare instances in which they begin to grow rapidly. Then they should be at once excised widely as probable melanomata.

Moles of the bluish black variety are especially dangerous; but none exposed to constant irritation should be tolerated. The removal of ordinary moles, when necessary, should be thorough, and often results in slight scarring. Electrolysis, punctate cauterization, or radium are the favorite methods of treatment.

Warts are due to infection with an ultramicroscopic, filterable organism, as demonstrated by Wile and Kingery. They are of importance because of the deformity (Kingery, L. B., The Etiology of Common Warts and Their Production in the Second Generation, Jour. A. M. A., 1921, 76,

441.) and the probability of further spread of the infection. When they occur on the sole, they are distressingly painful. The popular remedy, nitric acid, is not a safe one, causing ulceration when least expected, and this too often results in a keloidal scar. Warts are best treated by the frequent application of liquor calcis sulphurata, the cautery, or Roentgen rays. Venereal warts, condylomata acuminata, are also infectious and are troublesome because of their rapid and extensive growth and the tender surfaces upon which they occur. The parts should be kept as dry as possible and the same treatment as recommended for common warts may be used. Circumcision, by removing the moisture necessary for their growth, is a good prophylactic.

Seborrheic Warts are flat growths which when fully developed have a rough yellow or brown surface. They occur on the neck and trunk of adults, sometimes in profusion, often, but in smaller numbers, on the face and scalp and on the face are sometimes confused with senile keratoses, which may closely resemble them. The cautery or carbon dioxide snow removes them successfully.

Senile Keratoses develop during the latter part of life as rough, horny crusts, which at times fall off and leave a reddened rough area, or the skin may appear normal for a time, then the crust reforms. Gradually the redness of the base increases, and an erosion may be left when the crust falls or is picked off. The keratosis has then become an epithelioma. Not all go on to this end, but all are apt to do so. Frequent application of a mild ointment may delay the progress, or they may be removed by carbon dioxide snow or radiotherapy. Should they occur on the hands, as they sometimes do, the treatment should be especially vigorous, for they are much more likely to end in malignancy here.

Disturbances of Pigment. Freckles result from exposure to light and can be prevented or palliated by protecting the skin from strong light by hats or powder. Their removal is not easy and as a rule it is best to leave them until they disappear spontaneously. The peeling treatment is not a lasting cure, may result in making the freckles darker, or in a severe dermatitis. Lemon juice or peroxide have some effect upon them and are not dangerous remedies. Chloasma, like freckles, is difficult to treat, unless the internal disorder causing it can be cured.

THE CARBONDALE ANTI-MALARIA CAMPAIGN

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The Carbondale anti-malaria and mosquito campaign was the culmination of a number of events extending over a period of several years. A few years ago the State Department of Public Health published in the *Illinois Health News* an article calling attention the widespread prevalence of malaria in southern Illinois. In the fall of 1917, your society, the Southern Illinois Medical Society, gave a liberal discussion to the subject of malaria and passed a resolution asking that some state bureau make an investigation and a mosquito survey of southern Illinois to determine the distribution and breeding places of the malaria bearing anopheles mosquito.

In justice to this society and in recognition of your efforts at that time, I want to state that the seed from which the work grew and developed was planted in that resolution passed by your society in 1917.

In response to your request, Mr. Stewart Chandler, field entomologist of the State Natural History Survey, began a series of investigations along with his other work and made studies at Carbondale, Murphysboro, Herrin, and a few other neighboring cities. Because Mr. Chandler's time was limited for mosquito investigation and because Carbondale was his headquarters, the most complete and comprehensive report was made on the situation at Carbondale. This report of Mr. Chandler covered a period of two years, namely 1918 and 1919, and for the work carried on this summer proved an invaluable aid in serving as a foundation for the work undertaken. Mr. Chandler indicated in this report the various breeding places in the vicinity of Carbondale, with their relative importance, and basing his figures upon personal interviews with the doctors of Carbondale, gave an estimate of the average number of malaria cases in Carbondale annually as being between 200 and 250.

In the fall of 1921, engineers from the State Department and from the United States Public Health Service made investigations at Carbondale and other neighboring cities, to determine the feasibility of undertaking the actual control work. Their findings were, in substance, that the work at Carbondale was justifiable on account

of the large malarial rate, and that with the overcoming of one or two serious obstacles, the work could be carried on in that city.

The great difficulty at Carbondale centered around some 60 or 70 acres of cat-tail swamps lying north of the city and just outside the corporate limits. These swamps were in the vicinity of the Illinois Central Railroad shops and because large numbers of men were employed both day and night at these shops, the swamps were a very important factor to consider in laying plans for the campaign. In a census taken of the town early this year, it was found that 44 per cent of the malaria cases of the city were among the employees or their immediate families of the Illinois Central Railroad Company. The doctors at Carbondale also gave us their opinion that the swamps constituted the most serious breeding place in the area and so it became obvious that any control measures would have to provide for the control of the breeding in the swamps.

Here, then was the great obstacle to the work at Carbondale. The 60 acres of swamps were there and the only possible chance of placing them under control was to drain them. The assistant division engineer of the Illinois Central, without any reliable data for preparing an estimate, stated that on account of the great distance we would have to go to secure an outlet, the drainage of the swamps could be effected at a cost of about $20,000.00. The preliminary figures on this matter were enormous. To organize the area in a regular drainage district, if at all possible, would have entailed a delay of from two to three years. Our only hope then, was to convince the railroad company that by draining these swamps and coöperating with the city in the cleaning up of malaria and mosquitoes in the area, there would be a dollars and cents return to them through the elimination of sickness among their employees, and that the investment, from a business as well as a humanitarian standpoint, would be well worth their while.

From a visual inspection of the swamps it appeared that the preliminary estimate for their drainage was far too large. It appeared reasonable to believe that the swamps might be drained at a cost of about $5,000.00, but we could not be sure because no surveys had been made from which an estimate could be prepared. However, believing that the swamps could be drained at a non-prohibitive cost and having confidence in our ability to persuade the railroad company to assume the responsibility for their drainage, our department set to work to interest the proper railroad officials in the forthcoming campaign.

In the late fall of 1921 our engineers and director had met with some of the railroad officials and had secured from them a promise that the railroad would coöperate in the matter and if at all possible and if not too far beyond reason, would assume the responsibility of eliminating the swamps. While all these matters were being attended to, the doctors of Carbondale and other prominent citizens sought to work up some local interest in the proposed work. Their conclusion was that if the railroad company could be persuaded to take care of the swamps, the city could be persuaded to take care of the remainder of the work necessary to be done.

During the winter of 1922, an estimate was prepared of the work for Carbondale and the cost of carrying on this work aside from the drainage of the swamps, was placed at $3,000.00. for the season of 1922.

The director of our department then got in touch with the International Health Board, a part of the Rockefeller Foundation of New York City, and made an arrangement with that organization whereby the International Health Board would give $1.00 for each $2.00 spent by the city in control work, the State Department of Public Health agreeing to provide supervision.

A few weeks later, through the activities of the doctors belonging to the Lion's Club at Carbondale, some of our Department Engineers met with that club and described briefly what we proposed to do. The result of that meeting was a pledge of $2,000.00 on the part of the club to defray the expenses of the campaign.

It seemed then, about March first, that the work for the season of 1922 was assured. Then, as the days went by and the mosquitoes began to appear, we could get no definite information on what the railroad company intended to do. It looked for a time as if all the local interest which we had aroused over the work was to be of no avail. To proceed with control measures, regardless of what was to be done with the swamps, although undoubtedly of some value, presented some features which were not alto-

gether satisfactory. To undertake the control of all breeding places except the swamps would have left the major breeding place of the area still breeding, and we would have faced, at the end of the year, the embarrassing situation of having had the town full of mosquitoes all summer as well as a still very large malaria rate.

On the 5th of May, or at about the beginning of the mosquito breeding season, a meeting was held in Chicago between representatives of our department, the United States Public Health Service and the railroad company. After some deliberation and discussion, our department left that meeting with a signed agreement that the swamps would be drained and paid for by the railroad company if our department would secure for them the necessary releases of right of way for the construction of the ditch. The railroad engineers had made a complete survey of the situation and had estimated that the work would cost $8,000.00.

With this agreement in our hands the campaign began to take shape and although mosquitoes were breeding and the town was getting full of them, it was the 22nd of May before we were able to begin the actual operations. We went ahead then, in the expectation that the railroad company would begin the work upon the swamps before the peak of the breeding season was reached. The land through which the new ditch must pass was owned by seven different persons. Although most of them readily consented to the work upon their land, due to the delay occasioned by one man it was the 5th of June before the releases were in the hands of the railroad company.

Therefore, in the early part of June, we thought surely that all the preliminary matters were over and that work on the swamps would begin immediately. The plans for the drainage of the swamps called for a ditch about 4 feet deep and about 10 feet wide at the top and about 9,000 feet long. To construct it with a dredge was impossible, because the ground was too soft for dry-land equipment and there was not water enough for a floating dredge and to have used either would greatly have increased the cost. To use teams and scrapers would have been impossible. To use hand labor would have meant a long time before the land could be drained. Therefore it behooved us to look for some other method.

Ditching with dynamite is a comparatively new method of ditch construction, but we knew of other similar projects where dynamite had been used with great success. We suggested the use of dynamite to the railroad, but apparently our suggestions were not taken as much in earnest, as they should have been. Some time later, representatives of the United States Public Health Service were able to get in touch with the chief engineer of the railroad at Memphis, Tennessee. At that time he made an arrangement for some test shots to be made upon the work so that the railroad company could see for themselves what could be done. These test shots were made by the field demonstrator of the DuPont Powder Company and after two shots the company ordered enough dynamite to complete the job.

I have purposely described at some length the difficulties with which we met at Carbondale because I feel that other cities, perhaps having much the same situations, may be contemplating work but putting it off because they feel that the work entails an impossible task, and, although I acknowledge that the railroad has been very liberal in the handling of these matters, after our experience with them at Carbondale I do not look upon any task as impossible.

I want to go now to a discussion of some of the life habits of the mosquito which affect the problem of control measures, and then to a description of what was actually done at Carbondale.

Although there is a differentation between the malaria-bearing anopheles mosquito and other mosquitoes, for the purposes of the control work at Carbondale this differentation was not considered important, for we felt that for the campaign to be successful it would have to succeed not only in cutting down the malaria rate but also in the reduction of adult mosquitoes, regardless of their kind or species.

The average life of a mosquito is about 28 days and it has a flight range of about one mile. Therefore, in the early part of the season, because the first two or three crops of mosquitoes had not been exterminated, we did not begin to get noticeable results from our efforts until about three weeks after the control work was started. The area put under control comprised about six square miles and extended one-half mile in each direction from the city limits and about

three-quarters of a mile in each direction from the built-up section of the city. These limits, we figured, were about proper to prevent an influx from the breeding places outside of the controlled area.

In warm weather with a water temperature of 70 degrees and more it takes a mosquito from 7 to 8 days to hatch from the egg, pass through the larval and pupal stages and emerge an adult. Although attempts to kill the mosquito after it has reached the wing are of some value, the results are not far-reaching. The item of primary importance in the elimination of mosquitoes is to clean up their breeding places or treat them in such manner that the eggs which hatch can never develop to the full-grown mosquito. This means then, first of all, to get rid of all standing water, either by drainage or filling. And if this is impossible, it means to so treat the breeding places that the successive crops of larvae and pupae will be killed before they have a chance to produce the adult mosquito.

It is the nature of the anopheles mosquito to breed in comparatively fresh water, slowly moving streams, woodland pools, marshes, swamps and other collections of water that are comparatively free from sewage and other pollution. The other types of mosquitoes are not so sensitive and will breed in strongly polluted water as well, and sometimes better, than in clean and clear water. All mosquito breeding depends largely upon the protection afforded by nature in the form of grass, weeds, cat-tails, pond lilies and other vegetable growth scattered over the surface or around the edges or margin of a stream, pond, lake or other breeding place. Simply clearing the edge of a stream so that the mosquitoes are not afforded this protection will work wonders in control work.

In the control of breeding places which cannot be eliminated by drainage there are several methods at our disposal. All ditches should be cleared of debris and rubbish, the edges kept free from grass and other growth so that no protection is offered for the breeding, and a small trench cut in the bottom of the ditch on a proper grade to confine the low water flow and drain the pot holes which appear in all ditches that are not carefully maintained. Edges of lakes and ponds, as well as their surfaces, when rank with vegetation, should be cleared so that a reasonably clean water edge and clear surface may be obtained. The use of oil is never-failing if the breeding places are in such shape that the oil may spread properly. But if conditions are such that the film of oil is broken by debris and vegetation, success will not be complete. The mosquito larvae, although developing in the water, are true air breathers and their inability to push their respiratory siphons through the film of oil to their supply of air results in death. The chemical contents of the oil also add to its destructive ability as evidenced by the fact that the anopheles larvae, which float on the water surface, die much more rapidly than the other larvae, which hang head down in the water. Paris green may be also used successfully but has no effect upon any except the anopheles larvae. A species of fish, a small top-feeding minnow known as the gambusia affinis, is particularly useful in the destruction of mosquitoes, and if given an opportunity may be as effective as oil.

On the south side of Carbondale there is Thompson Lake, a body of water with a water surface of about 40 acres and having a number of small, shallow bays heavily overgrown with pond lilies, cat-tails and grass. In addition, the entire lake edge was provided with a heavy growth of vegetation, most of which was a fine grass, making these sheltered portions of the lake particularly suitable for mosquito breeding. On account of the wave action there was no breeding to be found in the main body of water. Good control was established upon this lake beginning May 8 and lasting for a period of six weeks by spending $10.50 in lowering the lake level. The water level in the lake was dropped 18 inches and the result was a very clean water edge, free from all vegetable growth and free from breeding. A few days before the lake level was lowered, Mr. Chandler and I made dips for larvae around the lake and in the majority of dips we secured from 50 to 200 larvae and eggs in one dip. Five weeks later I had reports from four different persons who had spent the night at the lake and they advised that they were not troubled with the mosquitoes, although earlier in the year they were numerous. During this period the lake was also stocked with gambusia and no doubt these fish played an important part in destroying what larvae were hatched.

About the middle of July, although evaporation was maintaining a clean water edge by the gradual recession of the water as the vegetation

encroached, there began to appear an abundant growth of cat-tails and pond lilies in the bays of the lake and some breeding was in evidence. There also appeared about this time a collection of drift matter around the shore of the lake, making a strip about ten feet wide around the entire lake where breeding could be found. Four bad patches of pond lilies and cat-tails were immediately cleared and the oil treatment used. Also, thereafter the strip around the lake edge was oiled once each week. On August first I made exactly 100 dips around the edges of the lake and caught one larva. On September first I made an equal number of dips and caught none. Taking into account that the first of August is about the peak of the breeding season, I consider that the control of the lake was almost absolute.

Pyle Fork to the East of the city and not far removed was a particularly good breeding place for the Anopheles mosquito. In wet weather the marginal grass furnished the necessary protection for breeding. In dry weather the stream became virtually a series of potholes, particularly favorable for breeding. To have cleared and regraded this stream would have meant the expenditure of a considerable sum of money. The largest drifts in the stream were removed and the flow of water encouraged as much as possible and the stream was oiled once each 10 days at the beginning of the season and later once each seven days. Due to the fact that conditions for oiling were not as they should have been to develop the full effectiveness of the oil, I was always able to find some breeding in this stream. As an indication of the control we had on this stream I give the results of my dips on August 2nd. Out of 100 dips along the edges and in pot holes, 5 days after the oil had been applied I caught 127 larvae and 7 pupae. About a week previous in making a collection of larvae to be used in an exhibit in Chicago, from this same stream but on a section not in the area of control, I collected 5 half gallon fruit jars full of larvae in about an hour's time. I estimate that each jar must have contained from 1,000 to 1,500 larvae. Later in September in making a collection for the State Fair, on this section outside the limits of control I found conditions much the same and had no difficulty in getting a large supply in a short time. Although the control of Pyle Fork was not absolute it is believed that the section oiled contributed but little to the mosquito production.

Running through Carbondale there are three ditches discharging to the East into Pyle Fork and one discharging to the West in Little Crab Orchard Creek. At the beginning of the season all of these ditches were cleared, regraded and rechanneled and placed and maintained in proper condition for the application of oil. Before work was started, about the middle of May, especially in the Mill Street ditch, breeding was very prolific. We could secure at one dip as many as 50 larvae, the most of which were Anopheles larvae. These ditches were oiled regularly once each week. Even after the ditches had been cleared and a small trench cut in the bottom to drain the potholes and confine the low water flow, and before these ditches were placed on an oiling schedule, a great reduction in the breeding was evident. In only a few instances during the summer was I able to find breeding in these ditches and when I did so the larvae were usually small and it is likely that they were killed by the next application of oil.

The Normal School pond on account of the protection afforded by grass and other vegetation was a particularly good mosquito breeding place. To control the breeding in this pond, the surface was cleared as well as the grass around the edges and stocked abundantly with Gambusia. Later in the season, due to the appearance of a thick growth all over the water surface which was difficult to remove entirely, the pond was oiled regularly once each week. In this connection I noted as I did at Thompson Lake that with the beginning of the use of oil this growth and drift matter began to disappear and there may be some connection between the oil and the vegetation. A pond in the North East part of town was cleared, stocked with fish and oiled regularly once each week and I was never able to find much breeding in it, although at the beginning of the season it was prolific.

Ten small ponds in the area were drained and eliminated from the problem entirely by the construction of a few feet of new ditch.

The most difficult task during the summer was the control of breeding in rain barrels, open wells and cisterns, tubs and other containers. The city of Carbondale has a population of about 6,200 including about 20 per cent colored. The colored population live for the most part in the East half

of the city, the North East part of town being a colored district almost entirely. Open wells and cisterns, rain barrels and other containers were extremely numerous in these districts although they were to be found in all sections of the city. The inadequate water supply at Carbondale I think is chiefly responsible for so many wells and cisterns and rain barrels. Especially among the negro residents, the most of whom take in washings for a livelihood, it was not uncommon to find as many as 9 rain barrels and tubs and an open cistern on one premise.

At the time of my inspection of open wells and cisterns during the latter part of June we discovered breeding in 391. Every open well and cistern in the town was immediately supplied with two Gambusia and later inspection showed that the fish were doing their work well. Out of 60 wells and cisterns examined in July we found breeding in two and the people had accidently or wilfully removed the fish from them. Altogether 584 open wells and cisterns were stocked with Gambusia. It is likely that this part of the work will have to be repeated next year as it is doubtful if the fish will live for more than one season in a cistern without sunlight.

Rain barrels, tubs, tin cans and other containers were a constant problem during the entire season. An exceedingly large number of these man-made mosquito breeders coupled with a decided indifference on the part of the people who maintained them made complete control an impossibility. To cope with this situation the City of Carbondale passed a mosquito ordinance providing a penalty for the breeding of mosquitoes on one's premises. Although no prosecutions were made, several people were threatened and these threats always succeeded in a compliance with the regulations. To effect the control of rain barrels and other containers, a regular house-to-house inspection was instituted. During the summer seven complete inspections of all premises in town were made. During the latter part of June the inspector reported on the first canvass of the town 831 rain barrels and tubs breeding mosquitoes. At this time the people were given a printed set of instructions advising them of the law and instructing them to either get rid of these containers or apply oil to them once each week. The second house-to-house inspection made two weeks later in July showed 298 of these containers still breeding. A third inspection caught breeding in 154 barrels and tubs. In August breeding was found in 206 barrels and tubs, showing some increase over the month of July. An inspector was then sent around the town with an oil can and he oiled each barrel and tub in the city and instructed the residents that another inspection would be made a week later and that violators would be prosecuted.

On the next inspection 19 violators were found but on the promise that they would be taken care of in the future no arrests were made. The last inspection made in September showed that people generally were taking care of these barrels and tubs, only seven violations being found. During the first week of October a canvass of the North East part of town found 11 tubs and barrels causing trouble, indicating again that most of the people were complying with the regulations.

Although we found on every inspection some breeding in rain barrels and tubs, I consider from the conditions with which we had to contend we had fair success in the control of rain barrels. I am also of the opinion that the mosquitoes which were present in Carbondale during the summer, for there were some, came largely from these containers which we were not able to control or from containers which escaped our attention. For instance, I received complaints during the summer from two neighboring families on South Normal avenue. I immediately went into that district and discovered breeding in a cistern nearby which had apparently escaped our attention, in a rain barrel a block away, and in the ice-water drips of two refrigerators in the basements of two nearby houses. On another occasion I was called to a house in the vicinity of one of the ditches which we had under control and was advised that our oiling was not proving satisfactory. I made a careful examination of the ditch to discover larvae and could not find any. I then asked the gentlemen to accompany me to his house and we found a small keg about half full of water that was causing the trouble. In one place I found breeding in the bowl of a toilet which had not been flushed for some time. At the Holden hospital I found breeding in the elevator shaft, in a stopped-up drain and in a tunnel that leads across the street to a basement of a garage. I found breeding in tin cans carelessly thrown in alleys or on the dump, in the gutters of houses, in old shoes and in almost every bit of

standing water that came to my knowledge. Naturally there were some mosquitoes in Carbondale, but I believe the general concensus of opinion is that there was much relief as a result of the campaign. A gentleman in the West part of town told me that in 1921 it had been his custom at night to get a wet towel and kill off all the mosquitoes in his house before retiring and that usually he would kill from a dozen to two dozen mosquitoes a night. This summer he tells me that he killed three mosquitoes in his house during the entire season. Traveling men stopping at the Roberts Hotel commented upon the improved conditions, referring to mosquitoes. Of course there are those who are not willing to admit that the work has been effective, but they are comparatively few and in the minority.

The Illinois Central swamps unfortunately were never completely drained, due to the delay in the lowering of three railroad culverts although they were much improved and were never this year the serious menace that they had been in previous years. An abundant supply of Gambusia developed in the swamps during the past two years and serving as a source for the stocking of other places, did much, I think, to cut down the breeding in the remaining wet portions of the swamps and in the newly constructed ditches.

In the course of the season's work about 10 miles of ditches were cleared, rechanneled and maintained in a clean condition. About 150 miles of ditches, streams and lake edge were oiled. About 4 acres of pond lilies and cattails were cleared from Thompson Lake and the Normal School pond. Ten small ponds were drained; 584 open wells and cisterns were stocked with Gambusia, and breeding stopped in 831 rain barrels and containers.

The cost of this work exclusive of the swamp drainage has been approximately $1,500.00 and includes the cost of tools, oil, and labor. The Illinois Central constructed the 9,000 feet of ditch at a cost of about $1,000.00. Probably by the time the necessary culverts are installed, due to the great expense of culvert material and installation, the work will cost them in the neighborhood of $3,000.00 instead of $8,000.00. The cost to the Lion's club has been about $1,000.00 instead of $2,000.00 and the cost to the International Health Board about $500.00 instead of $1,000.00. The State Department furnished my services as superintendent of the work and the United States Public Health service kept in close touch with the work through frequent visits of one of their Sanitary Engineers.

A census made early in the year gave us 267 cases of malaria in the city for 1921. All but 14 of these cases reported their physician and hence the census appears to be reliable and conforms to the estimate given by the doctors of Carbondale. I have not yet completed a census this year as I want to be sure that the season for malaria is over before I count the cases. However, during the first part of October I interviewed the physicians of Carbondale and at that time there appeared to have been about 35 cases of malaria in the town this season. We naturally expect some cases to have developed during the month of October, but I am confident that the number will not double itself, so it appears that from the work this summer we have made a reduction of over 200 cases of malaria. Figuring each case of malaria at a very low figure of $25.00 per case we have spent $1,500.00 and saved the people of that city $5,000.00, in addition to making living conditions a great deal better than they have been in the past.

Considering that the town was full of mosquitoes when we commenced our work and some of the difficulties which we had to overcome, I feel, as do most of the people in Carbondale, that the work has been very much worth while. The very fact that the officials of the Lion's club have already expressed their intentions of carrying on the work next year, is, I think, a splendid recommendation for the work.

What we have done in Carbondale, we hope to do eventually in every other Southern Illinois city where malaria and mosquitoes are a problem. The International Health Board has already set aside a certain sum of money for Illinois control work next year, and to any city which will undertake the work I feel certain in promising that the International Health Board may be persuaded to take care of about one-third of the expense.

I am to be in this territory all winter making surveys and investigations and working up interest in the work. In those cities which look with favor upon the work I expect to spend some time in the preparation of plans for the work next year. We know that Carbondale will repeat the operations next year and we hope, in addition, to carry on control work in at least three other cities.

MESENTERIC THROMBOSIS — REPORT OF A CASE WITH RECOVERY*

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Thrombosis of the mesentery arteries occurs so rarely, and so few cases are reported in the literature that the author wishes to relate the following case, not only because of its rarity, but also because the man is well today.

The case is that of a man 65 years of age, and weighing 166 pounds, who had never had any illnesses of any moment until now. The first years of his life were spent as a sailor, during which time he had a compound fracture of the left leg. During the past twenty years he has been following the vocation of painter and decorator. He has three brothers and two sisters, all living and well.

Present Complaint. On April 26, 1922, after having passed a good night, he was suddenly seized at 7:30 in the morning with moderate generalized abdominal pain. This pain gradually increased in severity, and within thirty minutes he began to vomit. By this time the pain became so severe, and the distress from vomiting so great, that he called the physician.

The bowels had moved the day previously, but not yet this morning. Upon examination, I found a board-like abdomen with tenderness over the entire region of the abdomen. There was no part more tender than any other. Of course, no masses could be felt because of the rigidity. His temperature was at this time 95.2, his pulse 52, and his respirations 18. A rectal examination was negative. It was also noticed that there was some discoloration of the abdomen consisting of pink, blotchy areas, as is frequently seen in cases of ectopic pregnancy. There was moderate tympany, and he was perspiring very freely. The remainder of the examination of the head, neck, chest and extremities was negative.

A diagnosis of acute surgical abdomen was made with a probability of perforated gastric or duodenal ulcer, even though there was no history of previous gastric distress.

Operation was performed at 9 o'clock in the morning, one and one-half hours after the onset of the attack. The incision was through the right lower rectus muscle. It was noted that the abdominal muscles were moderately edematous, and upon opening the abdomen, a quantity of bloody fluid escaped. It was then found that several coils of ileum and part of the jejunum were of a dark purplish color, and that this color extended along the mesentery to its root, and involving as much mesentery as there was intestine involved. The mesentery was so thickened and the intestine so edematous and moist that a diagnosis was made of a thrombosis or embolism of the mesenteric veins of this region rather than of the arteries.

Operation. Since it was evident that the bowel had no vitality, I resected the entire length of bowel and mesentery involved so that only healthy tissue remained, especially at the root of the mesentery. The length of bowel removed was found then to be four feet, two inches. The stump of the mesentery was carefully folded over upon itself, the mesenteric arteries and branches carefully ligated, and an end to end anastomosis of the bowel performed, followed by a closure of the mesentery between the two ends. Three cigarette drains were left in place, and the wound closed by layer sutures. Before leaving the table, the patient received 1 liter of physiologic salt solution, subcutaneously, in each axilla. His condition throughout the operation was excellent, and apparently without shock.

Post-operative notes. Continuous proctoclysis was started immediately, hot water bags placed to the feet, and morphin sulphate, in one-fourth grain doses, ordered for pain if necessary. During the first two days after the operation the patient felt fairly well, his temperature remained below 99, and his pulse varied around 90. On the third day he began vomiting which was immediately relieved bw gastric lavage. On the fifth day, a distressing hiccough was present, which could be relieved also by gastric lavage with hot water. One of the cigarette drains was removed on the fourth day, and the other two on the eighth day. He was given liquid parafine in doses of one-half ounce, morning and evening, beginning on the fourth day.

Careful enemata were given every second day with good results until the eighth day when the bowels began moving spontaneously. The wound healed quickly and the patient left the hospital on May 21, 1922.

On June 5, 1922, this man returned to the hospital with the following history: The day

*Read before McHenry Co. Medical Society, Nov. 16, 1922.

before he had noted that he was moderately constipated and in the evening had vomited once. The vomiting brought on a dull pain in the middle abdomen during the night which did not increase much in severity. He came to the hospital because he feared that something was wrong. Upon giving him enemas and nothing by mouth except water, with liquid parafine again morning and night, the condition quickly subsided, and he left the hospital a few days later feeling perfectly well. Since this time he has remained well and has followed his occupation of painter and decorator. In fact, he has painted the exterior of our hospital during the last two months.

In view of the fact that a condition of mesenteric thrombosis with recovery is comparatively rare, I decided to look up the literature to find out just what proportion of cases do recover.

In going over the cases reported in the literature, it is readily seen that what few cases are reported are those that got well, such as this one, and in all probability there are many cases that have not gotten well and that have not been reported.

In 1915 Elliot of Rochester, Minnesota, collected from the literature about one hundred operative cases in which there were a total of twenty-three recoveries including one case that he himself added to the list. Since then there are reports of two other cases recovering, and with this case adding a third, making a total of twenty-six recovered cases, as can be found in the literature.

The cause of mesenteric thrombosis is usually reported as unknown, although in one case there was a history of a traumatic abdomen, and in another the condition had followed a laporotomy with an operation upon the intestines. In this case although we could find no definite cause in the man's previous history, we have thought that possibly the fact that he has been a painter and so worked with lead for about twenty years may be a factor in having produced a partial sclerosis of the mesenteric veins.

A review of the subject as given in the modern text-books shows that very little space is allowed to this subject. In Johnson's Surgical Diagnosis, one reads that "Thrombosis of the mesentery veins presents no symptoms which enable us to make a differential diagnosis from other conditions such as acute intestinal obstruction. The causes may be from accidental injury to the abdomen, or during surgical operation upon the intestines. The symptoms are usually those of acute intestinal obstruction with symptoms of shock, with or without hemorrhage from the bowel or vomiting of blood."

Treatment. Immediate operation is, of course, the only treatment to be considered. For limited areas of gangrene (up to two or three hours) it has been suggested that simple invagination may be done with success by means of purse string suture. This method, however, does not appear to us to be feasible. If the diseased segment is not quickly removed from the abdomen, perforation of the slough and fatal peritonitis usually result. Where the entire circumference of the lumen is involved, a complete resection of the bowel is necessary. In doing a resection, care must be taken to remove sufficient tissue to have good vitality in the remaining ends. There is no increased risk in excising forty inches of gut than two inches. It is always best to be on the safe side and remove more rather than not enough of the bowel. Such a complete resection with end to end anastomosis is the only method by which these cases have been saved. It is also important to excise sufficient of the mesentery to its roots in order to remove all of the thrombus as possible, for if part of the thrombus is allowed to remain, the condition of clotting may ascend along the mesenteric vein, and so defeat the purpose of the operation.

Summary. 1. A case of mesenteric venous thrombosis is reported with recovery.

2. The cause is not definitely known in this case, but lead poisoning may have been a factor.

3. Immediate operation, soon after the onset as possible, with complete resection of the bowel and mesentery involved with end to end anastomosis is the treatment to be recommended in these cases.

I wish to take this opportunity to thank my associates, Dr. H. D. Eton, Dr. N. L. Seelye, and Miss Emma Traase, R. N., who assisted me in the treatment of this case.

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INTESTINAL STASIS*

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Intestinal stasis is the most common condition which the general practitioner is called on to treat, but it may well be said that the progress in its treatment has been very slow, as the bacteriologist, physiologist and pathologist have not enlightened us much on the etiology of this condition and its therapeutic management. Every physician has observed the effect of this condition in the liberation of toxins in the general circulation and its effect on the body as a whole or its local effect on some particular organ of the body; the nervous system being profoundly affected by this condition, causing a lack of general nerve and muscular force, and fatigue of the nerves and muscles.

Physiology of Intestinal Movements. The muscles of the stomach and intestines have a double nerve supply. The sympathetic fibres for the stomach and small intestines are conveyed by the splanchnic nerves, which originate in the lower dorsal and upper lumbar region of the spinal cord, and have their cell station in the solar plexus. Those for the colon and rectum originate in the lower lumbar region. The cell station being in the inferior mesenteric ganglion.

The stomach and small intestines are also supplied with fibres from the vagi. The large intestines and rectum are supplied through the pelvic nerves with fibres from the sacral cord, which are physiologically equivalent to the vagi. The vagal and sacral fibres end in connection with ganglion cells situated between the circular and longitudinal muscular coats, where they constitute the plexus myentericus of Auerbach. This has been shown by Keith to consist mainly of nodal tissue similar to that in the heart, and only to a small extent of nerve cells and fibres. Stimulation of the splanchnic nerves diminishes the tone of the gastric and intestinal muscles and inhibits their movements, whereas stimulation of the vagi or in the case of the colon, the pelvic nerves increase their tone and render their movement more active after temporarily inhibiting them. The vagus starts and, to some extent, maintains the secretion of the active chemical juices that digest the food. It plays an important part in gastric and intestinal peristalsis, also controls the final evacuation of the fecal residue.

Keith divides the alimentary canal up into a number of neuro-muscular sections, each section being cut off from its neighbor by a sphincter which blocks the passage of contraction waves and prevents them from spreading from one section to the next. As in the heart, probably each section is provided with a special centre or pacemaker, where the impulse arises that starts the rhythm of that section. Those of the colon are:

1. Ileo cecal valve.

*Read at 48tb Annual Meeting, Southern Illinois Medical Association, Cairo, Ill., Nov. 2 and 3, 1922.

2. Transverse colon below the pylorus.

3. Junction of the pelvic colon with the rectum.

4. Anal sphincters.

Etiology and Symptoms. Constipation either of the spastic or atonic type, and sometimes both. The spastic form is the most common in the tall, slim person and the atonic type in the fat person with the pendulous abdomens.

Irregular and exaggerated contractions of the intestines are due to an irritation of the parosympathetic nerves and while in the vagal area produce colic, when the pelvic area tenesmus.

Tonic spasm and atony are both due to sympathetic irritation which may express itself in excess movements due to the defect in the constriction of the sphincters. Atony due to inhibition of normal movements as seen in atonic dilatation of the stomach and in cases of intestinal stasis.

What are the causes of these alterations in the motor activity of the stomach and intestines?

1. Lack of chemical hormones, as from deficiencies of the ductless glands and other hormones from the blood.

2. To lack of proper reflex due to lowered tone of the nervous system.

3. Improper food, which does not leave enough residue to cause the defecation reflex.

4. Irritable foci along the intestinal tract, causing a spasm of the muscles of the intestines.

5. Any constitutional or infectious disease.

6. Any of the emotions, such as grief, anger, worry, etc.

7. Lack of exercise.

8. Bad habits in eating and drinking.

Symptoms. Pain most common over the cecum, hepatic flexure, splenic flexure and sigmoid, also around the region of the umbilicus. This may be due to a spasm of the bowel, or a distended bowel.

Headache which is worse in the mornings due to absorption of toxins and as a reflex through the sympathetic system.

Gas which is due either to the putrefaction of proteins or fermentation of carbohydrates.

Hyperchlorhydria due to sympathetic irritation at some distant point or to errors in diet.

Achylia gastrica, in some cases from the same causes.

Halitosis (bad breath), due to deficient elimination of the toxins.

Anorexia, due to the same cause and to an irritation of the gastric intestinal tract.

Fatigue, one of the most common symptoms, due to the toxic effect of the poisons on the adrenals and thyroid.

Neuroses of all kinds, due to the effect of the toxemia on the glands of internal secretions and their effect on the nervous system.

Dizziness and vertigo, very common, especially on stooping, due to sudden congestion of the brain.

Cold hands and feet, due to poor circulation as a result of the effect of the poisons on the blood vessels.

Palpitation, which is due to the pressure upwards of gas in the stomach and intestines and reflexly from the solar plexus.

EFFECTS OF INTESTINAL STASIS:

On the Gastro Intestinal Tract. Acute or chronic appendicitis due to extension of the inflammation of the cecum to the appendix.

Cancer of the colon due to irritation and toxemia.

Jaundice and cholecystitis may be caused by catarrhal condition of the intestines.

Colitis is present in nearly all cases.

Hemorrhoids are very common, due to congestion of hemorrhoidal veins.

Effects on Genito-Urinary Tracts. Nephritis, due to irritation of kidneys from the poisons.

Cystitis and pyelitis due to the colon bacillus getting into the blood.

Prostatitis from irritation, pressure of feces, and direct extension of inflammation.

Varicocele and neuralgia of testicles due to pressure on pelvic nerves and by reflex action.

Disorders of menstruation, due to pressure of loaded bowel on pelvic nerves and blood vessels. Also congestion and extension of inflammation to the uterus, tubes and ovaries.

Effects on the Circulatory System. Hypotension is very common, due to the insufficiency of splanchnic circulation and the adrenals.

Hyperpiesia or hypertension due to effect on blood vessels and stimulation of the sympathetic nervous system.

Myocardial weakness due to improper tone of nerves and muscles of the heart, due to absorption of the toxins.

Effects on the Respiratory System. Chronic rhinitis, pharyngitis, asthma, chronic bronchitis often accompany these conditions of intestinal stasis.

Effects on the Glands of Internal Secretion. Hyperplasia of thyroid due to its attempt to neutralize the toxemia.

Inhibiting effect on the suprarenals; also may effect the pituatary, pancreas and other glands of internal secretions.

On the Nervous System. Practically any form of neuroses may be caused by the effect of the poisons on the central and sympathetic nervous systems.

Diseases of Metabolism. Diabetes, gout, obesity, all these cases become worse when accompanied with intestinal stasis, also metabolism in general.

Effects on joints, muscles and nerves. All these are frequently inflamed due to the poisons in the system. Neuritis and neuralgia are very common.

Diseases of the Blood. Chlorosis and secondary anemias are very common with intestinal stasis, due to the effect of the poisons in the blood.

Effect on the Skin. Eczemas, psoraises, boils, carbuncles, acne, are often caused by intestinal stasis.

Effect on the Eyes. Eyes become easily fatigued. Iritis, cataract, conjunctival inflammation, optic neuritis often follow intestinal stasis.

CONCLUSIONS

Intestinal stasis is the most common condition which we meet in the practice of medicine. It is not given enough consideration by the medical profession. It is the basis of more complaints and diseases than any other condition, and if recognized and treated properly many more serious complications can be avoided. There is not any one treatment for intestinal stasis. Each case has to be studied carefully and treatment given to suit that particular case. Cathartics never have cured a case of intestinal stasis, but in most cases have made it worse. These are the cases that get away from the physician and make good patients for the quacks, chiropractors, various scientists, also the patent medicine vendor who sells his various cure-alls to these same people.

Society Proceedings

COOK COUNTY

CHICAGO MEDICAL SOCIETY

Joint Meeting of the Chicago Medical Society and the Chicago Society of Anesthetists, April 4, 1923

1. A Consideration of the Anesthetic Problem in Its Relation to Hospitals.—Isabella C. Herb.
   Discussion—J. E. Atkeisson.
2. Nitrous Oxide-Oxygen Anesthesia for Tonsillectomy in the Upright Position—Henry H. Everett.
   Discussion—S. Josephine McCollum.
3. Intercardiac Therapy in Anesthetic Syncope—Dennis W. Crile.
   Discussion—Nelson M. Percy and Oscar E. Nadeau.

Joint Meeting Chicago Medical and Chicago Tuberculosis Societies, April 11

A General Estimation of the Progress made in recent years in the Diagnosis and Treatment of Tuberculosis—Francis M. Pottenger, Monrovia, Calif.
Discussion—John Ritter, A. J. Hruby, S. A. Levinson, Clarence L. Wheaton, and H. J. Achard.

Regular Meeting, April 18, 1923

1. Positional Anomalies of the Gastro-Intestinal Tract—M. J. Hubeny.
   Discussion—Carl Beck and W. A. Newman Dorland.
2. Pneumoperitoneum—Roland S. Cron, University of Michigan, Ann Arbor, Mich.
3. Therapeutic Pneumoperitoneum and Peritoneoscopy—B. H. Orndoff.
   Discussion—W. J. Woolston.

Regular Meeting, April 25, 1923

The Sanitary District: Its Influence on Chicago's Health. (Illustrated by stereopticon.)—Dr. Willis O. Nance, Trustee, Sanitary District of Chicago.
Discussion—Langdon Pearse, Sanitary Engineer; Herman N. Bundesen, Commissioner of Health.

CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY

(Continued from April issue)

DISCUSSION

Dr. Harry Kahn asked what dosage was used.

Dr. John A. Cavanaugh asked whether Dr. von Colditz did anything besides give tuberculin.

Dr. Norwal N. Pierce thought the paper was very interesting and that a greater number of cases of tuberculosis of the ear are encountered than is realized. The bacillus rarely appears in the discharge and the diagnosis is difficult. The otoscopic picture or appearance may be misleading. He considered the title of the paper rather misleading and would not expect an ordinary suppurative otitis media that was not tuberculous to be cured by tuberculin, nor would be expect a cholestatoma to be cured by tuberculin. More attention should be paid to the diagnosis of these cases rather than to inject tuberculin on the barest suspicion. If the discharge is in-

jected into a guinea pig there will he a tuherculous reaction, providing the guinea pig does not die from bacteria which contaminate the discharge. Here, again, diagnosis is difficult. Dr. Pierce helieved that in cases with a discharge from the ear that is accompanied by signs of tuberculosis, tuherculin is to be recommended.

Dr. G. W. Boot thought the fact might have been overlooked that a patient with tuberculosis can have a suppurating ear that is not tuberculous just as there may he a discharging ear in a syphilitic patient that is not syphilitic. In either case, anything directed toward the betterment of the general condition will indirectly improve the suppurative process in the ear. Judging from the description, most of Dr. von Colditz's cases had been largely of that type; not necessarily cases of tuberculosis of the ear, but cases of general tuberculosis with suppurative ears, and improvement in the general health was followed by improvement in the local condition.

Dr. Otto J. Stein recalled two patients with clinical pulmonary tuberculosis and otorrhea of one ear. They received local treatment at the clinic for some time, with no result except keeping them clean. Both patients went to the Municipal Tuherculosis Sanitarium and underwent treatment for a period of a year and eight months respectively, and were discharged as cured. The pulmonary condition apparently was markedly improved hut the discharge from the ears persisted. In both cases Dr. Stein did a radical mastoid operation, with excellent results, thus corroborating Dr. Boot's remarks that there may he an otorrhea from a variety of causes not tuberculous in a patient with tuherculosis.

Dr. Stein had had only one experience with tuberculin in the active stage, and it ended disastrously. The patient had a mild tuherculosis and a suppurating ear. He improved for a time under tuherculin but it evidently was not used correctly, for it lightened up an active process, from which he died. Dr. Stein said that he refused to ever use tuherculin again.

Dr. G. Thomsen von Colditz (closing), answering Dr. Kahn, said that he started with the Parke Davis tahlets No. 1, dissolving one tahlet in 1 c.c. of sterile water. A tenth of 1 c.c. is given hypodermically at the first treatment. The dosage is gradually increased until the whole tablet is given at the tenth injection. Then he starts with the No. 2 tablet, increasing the dosage as before, and so on up to the No. 5 tablet.

Answering Dr. Cavanaugh he stated that he had varied the treatment in different cases. In some he has given only the tuherculin, besides keeping the auditory canal dry with packing. In other cases he has inflated the ear, using equal parts of iodin, menthol and camphor, and cleansed the auditory canal, in addition to the tuherculin.

Dr. von Colditz considers it very dangerous to give large doses of tuberculin, and gives it in very small doses so as to get either no reaction at all or a minimum amount.

Examination showed the lids markedly edematous and pendulous, forming a swelling which rose over an inch from the surface, and involved an area 2¼ inches horizontally. The inner margin of the swelling was formed by the nose, while temporalward, it reached the margin of the orbit. The superior orbital crest limited the swelling superiorly and inferiorly a marked bagging of the lids was present. The swelling was soft and doughy and not tender to the touch. Retraction of the lids revealed the conjunctiva to be swollen, red, soft and succulent. The eye was proptosed at least a centimeter and a half, and immobile. The greater part of the cornea was replaced by a disciform, yellowish-white, irregular mass, surrounded by a clouded rim, of cornea 2 mm. wide. This was insensitive.

A distinct pulsation could be felt over the whole eye and a distinct to and fro bruit, synchronous with the heart beat, was heard not only over the eye, but over the whole cranium, being especially loud on the left side and not affected much by the position of the head, but was louder with the head held low. Pressure over the left common carotid artery for ten minutes reduced the edema of the lids very markedly. The central and posterior walls of the cartilaginous portion of the left external auditory canal showed recently healed irregular wounds, about 0.8 in diameter. In the left ear the whispered voice was heard only on contact and the spoken voice was materially reduced. The Weber was not definitely lateralized; the Rinne was negative. X-ray examination revealed the bullet fragments in the region of the mastoid, but none elsewhere. There was no X-ray evidence of basal skull fracture.

On March 3, 1922, the left common carotid artery was ligated with two braided silk sutures a centimeter apart. The following morning the patient was in excellent spirits. He no longer felt the throbbing nor felt the ocular pulsation. Both radial pulses were good and equal. The swelling of the lids and proptosis were measurably diminished. On March 12, a leech was applied to the upper lid with some beneficial effect. About this time, very close observation revealed the fact that only in the prone position some pulsation was still present, as was also the murmur over the cranium. However, the swelling gradually became less; and the eye which was previously fixed and anesthetic became somewhat movable and sensitive. Hearing was also slightly improved (spoken voice at 15 feet).

It was thought that the pulsating eophthalmos was the result of an aneurysm of the internal carotid into the cavernous sinus, the sequel of a basal skull fracture, which in turn was due to a gunshot injury of the temporo-sphenoidal region. Because pressure relieved the symptoms and produced no dizziness or other cerebral manifestations, the indication was to tie the common carotid, not only for the local eye condition, but also as a prophylactic measure against intracranial hemorrhage and involvement of the right cavernous sinus. That the pulsation and the murmur were still faintly present when the patient was in the prone position is evidence that the collateral circulation is adequate and compensatory in the left cerebral hemisphere.

DISCUSSION

Dr. George F. Suker thought the interesting feature of the first case was the accidental finding of the melanoma of the choroid in the course of an examination for refraction and strabismus. Melanoma of the choroid was exceedingly rare. The etiology was that of the ordinary mole as it helonged to the class of moles. Because of this etiological factor there was, as in every mole, an inherent malignancy, but not necessarily an active one. Whether this hoy might receive a hlow upon the eye which would transform this latency into an active malignancy was questionahle. An active inflammatory process in the neighboring choroid could excite this latency. The peculiar mulherry color was another characteristic feature. Because of the stippled appearance of the growth there was a little more than the ordinary tendency to malignancy, the same heing true of moles elsewhere.

The pulsating exophthalmos patient was operated upon for

an orbital abscess at another hospital. An interesting feature was that it was a true aneurysm of the internal carotid artery and that every possible vessel was pulsating. The entire venus supply of the orbit and adnexa was transformed into an arterial supply. There was not only the passive congestion that might have been in the venules, but an active congestion because of the arterial circulation. Whether it would become necessary to tie the common carotid on the other side was a question. This had been done in some instances, but he doubted the advisability of such a step. Continuous pressure upon the common carotid had never been of any permanent value, nor had the injection of agar or gelatin into the cavernous sinus. The ligation of any of the orbital vessels in this case was absolutely contraindicated as the orbital vessels were not the site of the aneurysm.

(To be continued)

DE KALB COUNTY

April 26, 1923, at 12:30 p. m., the De Kalb County Medical Society were banqueted by the Sycamore City Hospital. Twenty-four physicians were present.

Doctors Emery B. Neff, L. B. Bagnall and Geo. H. Joost were unanimously elected members of the society.

The Secretary was instructed to draw up a resolution expressing our opposition to the application of the provisions of the Sheppard-Towner Maternity Act to the State of Illinois, and to send a copy of the same to the Senator and each Representative of the 35th District.

Mr. L. C. Schafer, a member of the Sycamore Hospital Board, gave a history of the Sycamore Hospital and told of the work being done there. His report showed a steady growth of the hospital.

Dr. A. C. Kane gave a splendid paper on Blood Pressure.

Dr. John W. Ovitz presented five kidney cases, as follows:

Two of obstruction of Ureter, one of kidney infection, one of removal of ruptured kidney and one of removal of a tubercular kidney.

Dr. I. S. Evans presented five cases of extraperitoneal appendicitis and one of the fracture of the arm followed by gas bacillus and streptococcus infection. In the latter case the arm was amputated and recovery followed.

CLIFFORD E. SMITH, Secretary.

Marriages

Maximilian Kern to Miss Elaine Frances Hoexter, both of Chicago, March 10.

Oliver Bernard Simon to Miss Edith Burr Baker, both of Batavia, Ill., recently.

Personals

Dr. Cassius Clay Rogers, Chicago, discussed the treatment of cranial and tutra-cranial lesions before the Lee County Medical Society, April 10, 1923, at Dixon.

Dr. Carl Beck, Chicago, spoke on "Surgical Diagnosis," before the Elgin Physicians' Club, April 9.

Dr. Edward V. Anderson, Woodstock, for forty-two years physician to the McHenry County Poor Farm, has resigned and will reside in San Diego, Calif.

Dr. Louise H. Keator, Polo, has been appointed physician at the Dixon State Hospital for Epileptics, Dixon.

Dr. Albert H. Andrews has been elected professor of otolaryngology of the Chicago Eye, Ear, Nose and Throat College.

Dr. Daniel N. Eisendrath gave a Mayo Foundation lecture at the Mayo Clinic, Rochester, Minn., April 26, on "The Clinical Importance of Renal and Ureteral Anomalies."

At the April 23 meeting of the Chicago Society of Internal Medicine Dr. Leonard G. Rowntree, Rochester, Minn., will speak on "Water Intoxication." Dr. Norman M. Keith, also of Rochester will speak on "Studies in Experimental Dehydration."

News Notes

—At the 75th annual meeting of the Peoria City Medical Society, April 23, Drs. O. B. Will and Wm. Al Malcolm of Peoria and Dr. Robt. Van der Heydt of Chicago gave addresses.

Dr. R. T. Woodyatt of Chicago gave an address on "Insulin" before the Vermilion County Medical Society, April 3.

—A delegation of more than 300 members of the Tri-State District Medical Association left Chicago by special train, April 15, for a visit to the clinics of Cleveland, Boston ,New Haven, Philadelphia, Baltimore and New York.

—Construction has begun on an entirely new plant for the Palmer Tuberculosis Sanatoria at Springfield, Ill. Among the unusual features of this institution will be a complete hospital section for surgical and obstetrical cases. This section will be devoted to surgery of the lung, both tuberculous and non-tuberculous; to general surgery among patients from tuberculosis and to the general and obstetrical care of tuberculous women. This surgical hospital, which is separated from the general sanatorium departments, will be ready for occupancy in September or October.

—Rock Island County Medical Society held annual election of officers April 10, 1923. The following were elected for year 1923-24: President, C. E. Robb, Rock Island; vice-president, D. N. Nelson, Moline; treasurer, A. T. Leipold, Moline; secretary, Phebe Pearsall, Moline.

Dr. Irving S. Stein of Chicago gave an excellent talk at this time on "X-Ray Diagnosis of Pregnancy."

—The new $300,000 Victory Memorial Hospital, Waukegan, will be dedicated, Memorial Day, May 30, and opened to patients a few days later.

—According to reports, Dr. John Gore Massie, Belleville, was sentenced to serve from one to ten years in the Southern Illinois Penitentiary at Chester, April 5, for operating a confidence game in oil stock. Judge Crow denied Dr. Massie's motion for a new trial.

—Physicians of Decatur will close their offices every Thursday afternoon between May 1 and November 1, in accordance with a vote taken, March 14, which was later confirmed at the regular monthly meeting of the Decatur Medical Association.

—Hearings began April 13, before the medical committee of the department of registration and education, for the revocation of all physicians' and pharmacists' licenses illegally issued under the term of W. H. H. Miller, former director of the department. Miller was convicted, January 28, of selling physicians' and pharmacists' licenses, raising examination grades, and selling questions in advance of state examinations. It is believed that more than 100 physicians and druggists in Illinois will lose their licenses.

—Three bills that would radically affect public health service in Illinois were introduced, March 8, in the lower branch of the general assembly. House Bill No. 306 requires a health official to cause an impartial investigation by a reputable sanitary engineer to be made of persons and places to be quarantined, the approval of the physician in charge being procured before the quarantine order is issued. House Bill No. 307 provides that any one professionally, educated to be a physician shall be ineligible to be a health officer in the state or any of its political subdivisions. House Bill No. 308 provides that the quarantine regulations applicable to persons afflicted with smallpox shall apply to persons vaccinated against that disease. The three bills were referred to the committee on judiciary, given a hearing and reported back to the house with recommendation that they do not pass.

—A dinner was held at the Hotel Morrison, April 23, at which nine hundred leaders of the medical, dental and pharmaceutical professions of Chicago and down state, together with members of the state legislature, outlined plans to push legislation to protect their professions and the public. They urged an amendment to the law which would transfer the appointment of examining boards from the director of the department of registration and education to the governor; that the examiners be appointed for terms of five years and that licenses be signed by the president and secretary of the board as well as by the director.—This conference was the result of the recent conviction of W. H. Miller, director of the department of registration and education, for irregularities in licensing men not qualified.

—Juan Frederick Derrick, colored, found guilty of practicing medicine without a license by Judge O'Connell, was sentenced to the house of correction for ten months and fined $100, it is reported.

—The Mason bill, which makes it possible for either husband or wife to obtain a divorce if the other is infected with venereal disease, was passed by the state senate, April 11, by a vote of 29 to 11.

—It is reported that Drs. John R. Thompson and John F. Shrader of Bridgeport, and Arthur R. Lindsay of Pinkstaff, pleaded guilty recently to violating the vital statistics law which requires registration of births within ten days, and were fined the minimum fine of $5 and costs. The complaints were filed by a special agent of the department of public health.

—At a meeting of the Chicago Woman's Club and the Illinois Society for the Prevention of Blindness, April 2, a committee was appointed to propose an amendment to the new state medical practice act that would require all midwives to have at least one year of high school training; from six months to a year of special training in midwifery; registration at the city health department, and submission to inspection of their work at any time by the health department.

Drs. Frank Cary, J. B. DeLee, Lena K. Sadler and Effa V. Davis comprise the committee.

—Plans for establishing a hearing board for every county in the state have been worked out by the state department of public health. The purpose of the boards is to give physicians, local registrars, midwives and others who are charged with violations of the vital statistics or other laws and regulations, an opportunity to state their cases to show cause why they should not be prosecuted in the courts. It is planned to request court action in only those instances in which circumstances indicate wilful and repeated violations, the aim of the hearing boards being to stimulate friendly cooperation through education. According to plans, the boards will consist of the local state's attorney, the local health officer and the district health superintendent, or a member of the state department of public health from Springfield. Such a board recently heard in Carroll County the case of the Lanark health officer charged with failing to quarantine and report cases of communicable diseases. Another sat in Lee County, where a physician was charged with failure to report smallpox. In both instances, the charges were dismissed on promises to observe the laws in the future.

Deaths

Isaac Abrahams, Chicago: Chicago Hospital College of Medicine, 1918; a Fellow A. M. A.; aged 38; died April 9.

Harry Vane Bailey, Pekin, Ill.; University of Nashville Medical Department, Nashville, Tenn., 1888; member of the Illinois State Medical Society; president of the Tazewell County Medical Society; aged 62; died April 10.

Louis E. Barton, Malta, Ill.; State University of Iowa College of Medicine, Iowa City, 1886; a Fellow A. M. A.; formerly president of the DeKalb County Medical Society; aged 63; died March 20, of cerebral hemorrhage.

Andrew B. Beattie, Anna, Ill.; St. Louis Medical College, St. Louis, 1859; Civil War veteran; for thirty-five years on the staff of the Anna State Hospital; aged 90; died March 28, of septicemia.

Calvin Suverill Case, Kenilworth, Ill.; University of Michigan Medical School, Ann Arbor, 1884; also a dentist; aged 76; died April 16, following an operation.

Levi B. Casey, Marion, Ill.; University of Louisville Medical Department, Louisville, Ky., 1885; University of Illinois College of Medicine, Chicago, 1888; member of the Illinois State Medical Society; aged 60; died March 14 of pneumonia following influenza.

Joseph L. Dorris, Banklick, Ill.; St. Louis College of Physicians and Surgeons, St. Louis, 1894; aged 65; died April 8 of diabetes mellitus.

John Holderread, Chicago; St. Louis College of Physicians and Surgeons, 1881; aged 65; died March 6 of heart disease, and the effects of narcotics at the Cook County Hospital.

Frank D. Lydick, Paris, Ill.; University of Michigan Medical School, Ann Arbor, 1890; formerly president of the board of education, and of the board of health; aged 63; died suddenly April 1, of angina pectoris.

William Haines Lyford, Port Byron, Ill.; Rush Medical College, Chicago, 1859; also a druggist; aged 86; died April 2 of senility.

Tillman E. McMurtry, Chicago; Rush Medical College, Chicago, 1899; member of the Illinois State Medical Society; aged 55; died April 22, of tuberculosis of the kidney.

Carl Layfield Oatman, Collinsville, Ill.; Barnes Medical College, St. Louis, 1896; aged 45; died April 3 of chronic nephritis.

Birckner H. Pasley, Decatur, Ill.; Starling Medical College, Columbus, Ohio, 1865; Civil War veteran; aged 84; died April 4 of senility.

Eda Bergquest Selders, Chicago; National Medical University, Chicago, 1899; member of the Illinois State Medical Society; aged 58; died April 5 of chronic nephritis.

Thomas P. Shanahan, Chicago; Rush Medical College, Chicago, 1877; aged 71; died April 8 of arteriosclerosis.

Granville M. Walker, Chicago (licensed, Illinois, 1878); Civil War veteran; aged 85; died April 9 of skull fracture, when he fell from a window.

Thomas Warloe, Chicago; Rush Medical College, Chicago, 1891; member of the Illinois State Medical Society; attending obstetrician of the Norwegian-American Hospital, attending physician to the Norwegian Lutheran-Bethesda Home and consulting physician to the Norwegian Old People's Home; aged 56; died April 18 of heart disease.

Thomas Matthews Watson, Griggsville, Ill.; Eclectic Medical Institute, Cincinnati, 1874; member of the Illinois State Medical Society; secretary of the board of education for thirty-seven years; aged 71; died March 18 of influenza.

James P. Way, Chicago; College of Physicians and Surgeons, Chicago, 1887; a Fellow A. M. A.; surgeon to the Chicago and Eastern Illinois, and the Baltimore and Ohio railroads; aged 60; died April 21 of myocarditis.

Elijah Wooley, Saybrook, Ill.; Hahnemann Medical College and Hospital, Chicago, 1880; Civil War veteran; aged 80; died March 14 of cerebral hemorrhage.

Alben Young, Chicago; Chicago Medical College, 1889; a Fellow A. M. A.; on the staff of the Ravenswood Hospital; aged 62; died April 2 of heart disease.



EDWARD H. OCHSNER, M. D.
PRESIDENT, ILLINOIS STATE MEDICAL SOCIETY, 1923-1924

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Contributors will submit all copy for publication typewritten on standard size paper and double spaced. Copy not complying with this rule will be returned, if convenient.

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Editorial

THE DECATUR MEETING

The 73rd annual meeting of the Illinois State Medical Society adjourned May 17, 1923, after what might be justly termed the most interesting session held in the Society in years.

This in spite of the fact that during the first two days of the meeting it rained continually rendering the roads impassable thus preventing hundreds from attending the meeting who would otherwise have done so. In spite of the inclement weather there was a registration of six hundred.

From the scientific standpoint the papers read at this meeting were above the average of papers read at previous meetings.

The House of Delegates met regularly and transacted a great amount of business. The reports of the numerous elective and appointive committees were the best ever presented to the House of Delegates and demonstrated clearly that the men presenting the reports are alive to the problems confronting the profession.

All the papers read at the annual meeting will be published during the year. Those who were unable to attend the meeting will read these papers at their leisure.

Dr. L. C. Taylor of Springfield was elected President-elect. Dr. E. H. Ochsner of Chicago becomes the active President of the Illinois State Medical Society. We have every reason to expect that the newly elected officers will carry on a strenuous campaign of efficiency in behalf of the interests of the profession that has characterized the term of their predecessors.

Dr. Ochsner's portrait appears as a supplement in this issue of the JOURNAL.

THE SENATE VOTE ON THE SHEPPARD-TOWNER CO-OPERATION BILL

The following is the affirmative and negative vote on the co-operative Sheppard-Towner Bill

that passed the Illinois State Senate last week. The vote of the respective Senators should be preserved by the Doctors in each senatorial district. The data will be found useful at some subsequent date.

The following Senators voted in the affirmative:

Bailey, Barbour, Barr, Buck, Dailey, Dunlap, Duvall, Essington, Ettelson, Glackin, Glenn, Haenisch, Hicks, Jewell, Kessinger, MacMurray, Marks, Mason, Roos, Schulze, Searcy, O. W. Smith, Sneed, Swift, Telford, Turnbaugh, VanLent. Yeas—27.

The following voted in the negative: Messrs. Boyd, Boehm, Carlson, Giberson, Gray, Mills, Piotrowski, Webster. Nays—8.

Answering present but not voting: Messrs. Cuthbertson, Shaw, N. E. Smith, Wright. Total—4.

Note: That Senator Barbour made a speech for the Bill and among other things said: "The Doctors think they own me;" that Senator Dunlap made a speech for the bill; that Senator Glenn spoke for the Bill and kidded the Doctors throughout his speech; that Senator Jewell spoke for the Bill as did also Senator Mason, likewise Senator Swift.

Senators Boehm, Giberson, Mills and Webster spoke against the Bill. Senator Wright, a Doctor, was present but did not vote.

OFFICIALS ENSLAVE UNITED STATES. 15,000,000 PENSIONERS ON PUBLIC BOUNTY.

The *New York World,* August 1, 1922, quoting a speech of Senator Stanley in the United States Senate says: Senator Stanley deplores the high cost of government, drawing a parallel to pre-revolution France. He says further: The cost of Government has become "unbearable" and a continuation of existing circumstances will lead to conditions similar to those that brought about the French Revolution.

The Senator said that he did not blame any political party, but a *"paternalistic regime" for a situation which, he fears, "will enslave and bankrupt this country."*

"It has been said," Mr. Stanley went on, "that there are 15,000,000 pensioners on public bounty. If that is true, there is an officeholder, a tax eater, on the backs of every two tax producers in the United States. That situation crushed France and produced the French Revolution; it was the bane and the damnation of Germany."

Mr. Stanley asserted too many functions of local and State Governments and of the courts are now being controlled by hidden bureaus in Washington.

"There is more power today exercised in these marble sarcophagi by unknown experts, politically controlled appointees of whispering propaganda, than by the courts themselves," he said.

As quoted by the *New York Telegram,* editorially, August 4, from the same speech:

"He pointed out that expenditures arising out of wars had caused enormous waste in officialism." He went on:—

"It is due to persistent growth of bureaucratic control, the increase of the personnel of departments and of commissions and of boards and of burasus and of every other agency ever used or ever abused by a paternalistic regime."

Note and Comment: Nowhere is the danger of bureaucratic control of the destinies of the human family more pernicious and dangerous then in the attempt of lay people to dictate and direct the practice of medicine. There is too much officialdom both within and without the profession. In medical affairs a bureaucracy has sprung up in recent years, anti-dating the development of the same sort of bureaucratic autocracy referred to by Senator Stanley in national lay officialdom.

Congressman Volk has clearly shown and proven how the interlocking activities of such medical and lay bureaucratic officialdom have produced the narcotic drug situation with its horrors in this country.

The administration of the Volsted Act under the Prohibition Amendment, shows another striking example.

The Sheppard-Towner Maternity Bill or Act is another example of the possibilities of the frightful expense and bureaucratic autocracy possibilities under medical, pseudo-medical or lay officialdom.

Health insurance, and the various schemes of State Medicine, in their promoted forms, furnish still other examples of the legislative and administrative abortions of frightful expense and of administrative power and possibilities of official corruption and graft and blackmail and terrorism.

ABOLITION OF COCAINE

The following communication appeared in *The London Times* of March 24. The authors, Sir W. M. Bayliss and Dr. C. W. Saleeby, are among the best known medical authorities in Great Britain. This letter is of interest in this country as showing the attitude of physicians in England towards the narcotic situation there and particularly to cocaine. It is also of interest to note that credit is given to American research for the discovery of a safe substitute for cocaine.

To the Editor of the Times: "We submit that the abolition of the use of cocaine by international action is the only effective means of ending the evils to which this drug gives rise, and this is now feasible without detriment to any department of surgical practice.

The failure, everywhere, of all past or present methods of control is acknowledged. One of us has recently observed, in Montreal, the futility of the combined efforts of the police, the health authorities and the Customs officers, and he has returned to Europe to find similar failure alike in this country and in France. Montreal, it may be noted, is the headquarters for the illicit distribution of the drug in North America. It is evident, and for evident reasons, that so long as the drug is manufactured it will be misused. In the light of the experience of other countries, we are entirely skeptical of the success of the new legislation proposed by the Home Office.

The Committee on the Use of Cocaine in Dentistry reported in 1917 (Cd. 8489), suggesting further restrictive legislation. One of the present writers, serving on that committee, did not sign the report, but appended a memorandum in which the view was expressed that, according to the evidence of leading dental surgeons, cocaine was no longer needed in dentistry, completely effective substitutes, such as procaine, being available.

A new synthetic substitute, known for short as "butyn," has now been prepared in Chicago and tested widely with very good results. Like procaine, it has no action on the central nervous system. A highly favorable report on its use in ophthalmic practice appeared in the *British Medical Journal* for January 13 last. Its introduction completes the argument advanced in 1917.

International action should, therefore, be taken to end the present manufacture of cocaine in Germany and Switzerland or elsewhere, and the cultivation of the cocoa plant in Peru, Java, Bolivia and other countries. The best instrument for such action, given an instructed and active public opinion in the various countries concerned, is the Opium Committee of the League of Nations. Though neither the United States nor Germany is as yet a member of the League, both of these countries are represented on the Opium Committee. We urge that our government should give full and cogent instructions in this sense to Sir Malcolm Delevigne, the British representative on that committee, prior to its next meeting in May. This, we are convinced, is the only way with cocaine.

We are, Sir, yours,

W. M. BAYLISS,
C. W. SALEEBY."

OSTEOPATHS CANNOT PRACTICE MEDICINE AND SURGERY

An osteopath, practicing in Twin Falls County, Idaho, was convicted of practicing surgery without a license, following the performance of appendectomy, after prosecution in the superior court. An appeal to the state supreme court resulted in confirmation of this verdict. The decision states that the holder of a license to practice osteopathy in Idaho is not authorized to practice medicine and surgery. The full text of the decision follows:

Appellant was convicted of practicing medicine and surgery without a license, with the intent of receiving compensation therefor. The operation performed consisted of making an incision into the abdomen of a human being and removing the appendix. It was shown that the appellant did not have a license authorizing him to practice medicine and surgery, but held a license authorizing him to practice osteopathy.

That the legislature has power to prescribe the qualifications for those engaged in the practice of medicine and surgery, or either, and to prohibit or penalize such practice by one not possessing such license, is not open to doubt. State v. Johnson, 84 Kan. 411, 114 Pac. 390, 41 L. R. A. N. S. 539; Brag v. State, 134 Ala. 165, 32 So. 767, 58 L. R. A. 925.

In 1899, the legislature of this state enacted a law regulating the practice of medicine and surgery. This law was substantially the same as Title 16, Chap. 90, of the Compiled Statutes. By C. S. 2105, it is provided that every person, except as otherwise provided by law, desiring to commence the practice of medicine and surgery, or either of them, within the state shall show certain educational qualifications and submit to an examination. C. S. 2112 contains the definition of the practice of medicine and surgery, or either. The statute also makes it a misdemeanor for one to practice medicine and surgery who has not obtained the requisite license.

In 1907, the legislature passed an act regulating the practice of osteopathy which is now chapter 92 of the same title in the Compiled Statutes. This statute provides that a successful applicant shall receive "a certificate granting him or her the right to practice osteopathy in the State of Idaho." Unless, therefore, the term "osteopathy" is broad enough to comprehend surgery, or in other words, unless the practice of osteopathy includes the practice of surgery, the statutory prohibition of the practice of medicine and surgery, except by one who has obtained the license to practice medicine and surgery as prescribed by Chapter 90, still prevails.

The New Standard Dictionary of the English lan-

guage defines osteopathy as follows: "A system of treating disease without drugs, propounded by Dr. A. T. Still, 1874. It is based on the belief that disease is caused by some part of the human mechanism being out of proper adjustment, as in the case of misplaced bone, cartilage, or ligament, adhesions or contraction of muscle, etc., resulting in unnatural pressure on or obstruction to nerve, blood, or lymph. Osteopthy * * * seeks to adjust correctly the misplaced parts by manipulation."

In the case of State v. Johnson, supra, quoting six words and phrases, p. 5070, osteopathy is defined as "a method of treating disease of the human body without the use of drugs, by means of manipulations applied to various nerve centers—chiefly those along the spine—with a view to inducing free circulation of the blood and lymph, and an equal distribution of the nerve forces. Special attention is given to the readjustment of any bones, muscles, or ligaments not in the normal position."

Osteopathy, therefore, we are justified in concluding from the foregoing and similar definitions, is a system of treating disease of the human body without drugs and by means of manipulation. The word "manipulation" certainly does not cover and include the practice of surgery in any form. Since, therefore, the term "osteopathy" does not include medicine and surgery within its content, we conclude that it was the legislative intent that a license to practice osteopathy does not carry with it the right to practice medicine and surgery, or either of them.

The appellant sought to show that the standard and accredited colleges of osteopathy include medicine and surgery as a part of their curricula; that the science or practice of osteopathy contemplates and comprehends the practice of medicine and surgery; that the colleges of osteopathy use the same textbooks on the practice of medicine and surgery that are used in the best recognized medical schools and devote as much time to the subject as is consumed in the best allopathic colleges in this country. The trial court refused to receive such evidence. In this it did not err.

The evident purpose of the proposed evidence was to show that graduates of recognized and accredited colleges of osteopathy now possess the requisite knowledge and skill to engage in the practice of medicine and surgery. The only question here is as to whether the applicant possessed the statutory qualifications; his actual qualifications were not in issue. The evidence was therefore irrelevant.

If it be true that graduates of colleges of osteopathy possess the requisite knowledge and skill to enable them to practice medicine and surgery, it would suggest the propriety of bringing the facts to the attention of the legislature with a view of obtaining legislative action granting to osteopathic physicians upon proper examination, the right to practice medicine and surgery as well as osteopathy.

The judgment must therefore be affirmed, and it is so ordered.—*Northwest Medicine.*

SAN FRANCISCO HOTELS

The San Francisco Session

The following list of hotels with location and prices is furnished by the Local Committee of Arrangements. Several hotels, as shown by the star, are already booked to capacity. All hotels are conveniently located except those in Oakland and Berkeley, which are about an hour from the Civic Auditorium.

The California Committee will be able to house all guests comfortably. In order that the most agreeable arrangements may be made, it is requested that from now on Fellows write directly to California Headquarters, 806 Balboa Building, for hotel reservations. Please give the date of expected arrival in all applications.

The lower prices quoted below refer to one person. The higher are for one to two persons in a room. Some hotels charge the same for one or two persons. All rooms have baths. Please make reservations early.

Leading Hotels in San Francisco (All European Plan)—Location and Rates

Name and Address	All Rooms With Bath
Alcazar, 326 O'Farrell	$ $ 3.00
Alexander, 352 Geary St.	2.50 — 4.00
Ambassador, Mason and Eddy	2.50 — 4.00
Antlers, 245 Powell St.	3.50 — 5.50
Argonaut, 44 Fourth St.	2.00 — 3.50
Baldwin, 321 Grant Ave.	3.00
Bellevue, Geary and Taylor Sts.	3.50 — 5.00
Beresford, 635 Sutter St.	2.50 — 5.00
Cadillac, 380 Eddy St.	2.00 — 2.50
Cartwright, 524 Sutter St.	2.50 — 4.00
Cecil (American plan), 545 Post St.	8.00 — 12.00
*Chancellor, 433 Powell St.	2.50 — 4.00
Clark, 217 Eddy St.	2.50 — 3.50
*Clift, Geary and Taylor Sts.	8.00
Colonial, 650 Bush St.	4.00 — 5.00
Columbia, 411 O'Farrell St.	2.00 — 2.50
Court, 205 Bush St.	3.00 — 4.00
Dalt, 34 Turk St.	2.50 — 3.50
*Fairmont, California and Mason Sts.	7.00 — 10.00
Federal, 1087 Market St.	2.50 — 3.50
Fielding, 386 Geary St.	2.50 — 3.50
Garfield, 354 O'Farrell St.	2.00 — 3.50
Garland, 505 O'Farrell St.	2.00 — 3.00
Grand, 57 Taylor St.	2.00 — 3.00
Herald, Eddy and Jones Sts.	2.00 — 3.50
Herbert's (men only), 151 Powell St.	2.00 — 3.00
Kensington, 580 Geary St.	2.00 — 3.00
Keystone, 54 Fourth St.	2.50 — 3.50
King George, 334 Mason St	2.50 — 5.00
Lankershim, 55 Fifth St.	3.50
Larne, 210 Ellis St.	3.00 — 4.50
Manx, Powell and O'Farrell Sts.	4.00 — 5.00
Maryland, 490 Geary St.	2.00 — 3.50
Mentone, 387 Ellis St.	2.50 — 3.00
Normandie, 1499 Sutter St.	1.75 — 3.50
Paisley, 432 Geary St.	2.00 — 3.00
*Palace, Market and Montgomery Sts.	8.00 — 10.00
*Plaza, Post and Stockton Sts.	5.00 — 6.00
*Ramona, 174 Ellis St.	2.50 — 3.50
Regent, 563 Sutter St.	2.00 — 3.50
Richelieu, Geary and Van Ness Ave.	5.00
Robins, 711 Post St.	2.00 — 2.56
Somerton, 440 Geary St.	2.00 — 4.00
Spaulding, 240 O'Farrell St.	2.50 — 5.00
Stanford, 250 Kearny St.	1.00 — 2.00
State, 16 Turk St.	1.50 — 2.00
*St. Francis, Union Square	4.00 — 10.00
*Stewart, 353 Geary St.	3.50 — 7.00
Stratford, Powell and Geary Sts.	6.00

Sutter, Sutter and Kearney Sts.....		4.00
Travelers, 255 O'Farrell St.....	2.00 —	3.50
Terminal, 60 Market St.....	2.50 —	4.00
Turpin, 17 Powell St.....	3.00 —	3.50
Victoria, Bush and Stockton Sts.....	2.50 —	4.00
Washington, Grant and Bush Sts.....	2.50 —	4.00
Wellington, 610 Geary St.....	2.50 —	4.00
*Whitcomb, Market and Civic Center...	4.00 —	8.00
Wiltshire, 340 Stockton St.....	3.00 —	4.50
Worth, 641 Post St.....	2.00 —	2.50
Hotel Oakland, Oakland, Calif.....	3.00 —	10.00
Hotel Claremont, Berkeley, Calif....	3.00 —	5.00
Hotel Whitcotton, Berkeley, Calif....	3.00 —	5.00

* Booked to capacity.

AMERICAN DRUG MANUFACTURERS MEET

The Twelfth Annual Meeting of the American Drug Manufacturers' Association was held in New York City, April 16-19. Important matters relating to narcotic regulations, legislation, pharmaceutical progress, scientific research, medical chemicals and other subjects were discussed in the various sections.

A most successful meeting was closed with a banquet on April 19, at which the Hon. Royal S. Copeland, newly elected Senator from New York State, and the Hon. James A. Reed, Senator from Missouri, were guests of honor.

The officers elected for the ensuing year were: President, A. S. Burdick, President of The Abbott Laboratories, Chicago; First Vice-President, S. B. Penick, President of S. B. Penick & Co., New York; Second Vice-President, Willard Ohliger, President of Frederick Stearns & Co., Detroit; Third Vice-President, Ralph R. Patch, Vice-President of E. L. Patch & Co., Boston; Secretary A. Homer Smith, of Washington, D. C.; Treasurer, Franklin Black, Secretary of Charles Pfizer & Co., New York.

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Viola Terwilliger.....Bradford
A. T. Telford.....Olney
C. H. Tearnan.....Decatur
G. F. Turner.....Long Point
R. V. Thomas.....Manteno
Chas. D. Thomas.....Peoria
J. R. Thompson.....Bridgeport
F. A. Turner.....Rockford
A. Franklin Turner.....Arthur
J. E. Tuite.....Rockford
Edward Trippel.....O'Fallon
G. S. Trotter.....Olney
Stewart C. Thomson .....Byron
R. R. Trueblood.....Lawrenceville
Royal Tharp.....East St. Louis
Louis N. Tate.....Galesburg
L. C. Tate.....Springfield
L. C. Taylor.....Springfield
Franklin Turner .....Arthur, Ill.
E. P. Van Arsdale.....Beardstown
H. M. Voris.....East St. Louis
C. E. Wilkinson.....Danville
C. E. Williams.....Danville
R. R. Whiteside.....Moline
K. W. Wahlberg.....Moline
O. D. Willstead.....Chatsworth
J. W. Walton.....Homer
H. M. Wolfe.....Taylorville
A. W. Woods.....
A. A. Wilson.....Davis
W. C. Wood.....Decatur
J. W. Walton.....Homer
Rodney A. Wright.....De Kalb
H. M. Wolfe.....Taylorville
H. Wellmerling .....Bloomington
A. R. Whitefort.....St. Elmo
Wm. L. Wilson.....Hinsdale
N. A. Wright.....Manito
F. W. Werner.....Joliet
H. W. Woodruff.....Joliet
Geo. Woodruff .....Joliet
G. B. Wilcox.....Joliet
Wm. Welch .....Joliet
F. J. Welch .....Bloomington
C. F. Wilhelmy .....East St. Louis
M. R. Williamson.....Alton
J. S. Wead.....Wyoming
Alma T. Wead.....Wyoming
C. Martin Wood.....Decatur
L. G. Wisner.....Herscher
W. W. Williams.....Quincy
J. D. Worrell.....Monmouth
A. E. Williams.....Rock Island
Glenn E. Wright.....Woodstock
O. D. Willstead.....Chatsworth
E. W. Weir.....La Salle
W. F. Weis.....Sparta
L. J. Weir.....Marshall
A. Weichelt.....Barrington
T. H. Wagner.....Joliet
L. H. Wiman.....La Moille
Geo. A. Wash.....Gibson City
C. S. Wilson.....Freeburg
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G. T. Weber.....Olney
J. A. Weber.....Olney
F. J. Weber.....Olney
J. C. Weber.....Olney
Winnebago County Medical Society.....Rockford
R. S. Watson.....Joliet
Carl H. Wilkinson.....De Kalb

WILL COUNTY MEDICAL SOCIETY—JOLIET

Rhoda Galloway Yolton.....Bloomington
E. Young .....Mansfield
Chas. A. Zeigler.....Amboy
H. A. Zinser.....Washington
H. S. Zimmerman.....Cameron

Note—Will County Medical Society contributed $350.00 to the fund. Rock Island County Medical Society contributed $100.00 to the fund. These two organizations are the only County Societies that as organizations have contributed to the fund.

The proposed campaign cannot be prosecuted without funds; it must be supported by popular subscription. It is hoped that every doctor will subscribe to this worthy cause. Serious disease diverted from the incompetent will result in the saving of thousands of lives and will prevent much permanent invalidism.

This campaign will achieve two great objectives: A gradual, but ultimate restoration of the medical profession to its merited place in the public sympathy and confidence and the inestimable benefits to humanity through the consequent prevention of disease and the preservation of life.

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Please sign and mail to the Illinois State Medical Society.

To the Officers of the Illinois State Medical Society and Members of the Council:

"I am in accord with the proposed newspaper educational campaign in the press of Illinois, unanimously adopted by the House of Delegates of the State Society at the 1922 meeting and the plan recommended by the Council of the Society, and as evidence of my desire to co-operate with the Officers

of the Council and of the State Society, I hereby enclose my check for $.....to aid in defraying the expenses thereof:

MAKE CHECKS PAYABLE TO THE ILLINOIS STATE MEDICAL SOCIETY.

Name.....M. D.

Street .....

City..... County.....

Sign the above pledge card, make out a check payable to the Illinois State Medical Society and mail both in an envelope addressed as follows:

From

.....

.....

.....

ILLINOIS STATE MEDICAL SOCIETY,
c/o Cashier, Sheridan Trust & Savings Bank,
4738 Broadway,
Chicago, Illinois."

25 E. Washington St.,
Chicago, Ill. Lay Publicity Committee.

CHICAGO MEDICAL SOCIETY SUBSCRIBERS TO THE LAY EDUCATIONAL FUND OF THE ILLINOIS STATE MEDICAL SOCIETY

The list has been carefully checked to make sure of accuracy. If an error has crept in, kindly note same and forward to the Committee.

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Geo. F. Thompson
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H. Zaczeck
O. Zelezny
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Joseph Zabokrtsky

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Name.....M. D.
Street .....
City .....County .....

"Sign the above pledge card, make out a check payable to the Illinois State Medical Society and mail both in an envelope as follows:

From .....

ILLINOIS STATE MEDICAL SOCIETY,
c/o Cashier, Sheridan Trust & Savings Bank,
4738 Broadway,
Chicago, Illinois."

Lay Publicity Committee, 25 E. Washington St.

Correspondence

SHEPPARD-TOWNER

Silvis, Ill., May 11, 1923.

To the Editor:

Illinois occupies the pivotal position in the Federal Maternalism proposal. An Illinois rejection of the Sheppard-Towner Act would end its popularity almost at once, while an acceptance by the present General Assembly would loosen a flood of Federal fifty-fifty proposals that would turn the face of Robert Morris to the north wall of his grave.

In all legislation of this type five states bear the brunt of expense for the entire country. The legislatures of New York and Massachusetts have declined to admit that they can prosper under such a burden. These five states, with seven others, the twelve bearing more than 95 per cent. of income taxation and the main burden of property taxation, have no protection other than an appeal to the mercy of the remaining thirty-six state legislatures.

The Texas A. M. A. delegate who stated in a discussion of the Sheppard-Towner Act that Texas procured two dollars for every one dollar from every fifty-fifty Federal aid proposal which could be enacted and who inelegantly added that they proposed to milk that plan until it was dry, stated a proposition which can bankrupt those twelve of our United States. That a legislator should advance the interests of his state is proper, but that the legislatures of thirty-six states would, after deliberate understanding, work fundamental hardship upon twelve sister states is beyond belief.

The Maternity Act is merely one of a type. It happens that those practitioners of medicine who see patients at home or in the small hospital are qualified, in this instance, to give expert advice, and it happens that these men know the futile and inane provisions of the Sheppard-Towner Act, but that they, on a professional plea, should influence National or State legislation is not to be expected unless they will go somewhat out of their way and explain to their Assemblymen the truth that maternity care is largely a matter of meeting the unexpected halfway and working through. You and I know that the only general teaching which can possibly be put out is the teaching of general hygiene and nothing more; but assemblymen or welfare organizations have no way of knowing that. I have come to feel that if ever it seems reasonably certain how a given patient will progress in pregnancy or labor then it is time to guard for she is probably paving the way for something unexpected. E. M. Sala worded it in a fashion that has remained with me for years: "The more I know, the less I am sure of." And the unmerciful egotism which prompts some people to want to shout from the housetops things which they cannot possibly be sure of, always calls that phrase to mind.

I believe that nearly ninety per cent. of our assemblymen would drop it like it was hot if their own physicians at home told them the real dangers, even at the risk of temporarily offending the little bunch of uplifters who have been "sold" by the three years of propaganda. So far as political play goes there are plenty of other fields they would prefer if they knew the real harm of this one for women and children.

As to the Federal aid, I am convinced that if Illinois and possibly Pennsylvania should stand with New York and Massachusetts on this proposal, no thirty-six states could be found so blinded to the general welfare as to kill the goose that laid the golden egg. Those states which would benefit financially would probably not insist. That is why I say that Illinois is in the pivotal position. If the present legislature rejects or postpones action the thing will die down and will expire at the end of its five-year period which is already nearly half gone. Money for propaganda purposes tightens up after the main effort has been made. In that case it would not be heard of again for, all through the country, a very deep reaction has developed in the last eight months against the looseness and confusion which always seem to follow the tensity of wars. Except in interstate matters the fifty-fifty plan of finance does dodge a Constitutional prohibition by an attempt to bribe states and it has developed a resentment which is real.

A little postponement is all that need be asked of the present Assembly and the voters will take care that it does not come up again.

Sincerely,

Wm. D. Chapman.

Original Articles

PRESIDENT'S ADDRESS.*

E. P. Sloan, M. D.
BLOOMINGTON, ILL.

To the Members of the Illinois State Medical Society:—The 73rd year of the Illinois State Medical Society has passed into history.

In many ways it has been a most successful year. The local societies are in better condition than at any previous time due, in great measure, to the work of your councilors.

There is a general harmony among our members; a spirit of loyalty and solidarity for mutual betterment is evident in all departments of our work. The Physicians Fellowship Clubs are an indication of the growing co-operative spirit in this direction.

A better understanding and feeling have developed between the State Department of Health and our Society. Mutual co-operation will work to the betterment of both and to the welfare of the people of our State.

The State Department of Registration has been investigated and is in process of a long-needed renovation: We wish to express appreciation of the efforts of many of our members in this work, and especially of the loyal and efficient accomplishments of our president-elect, Dr. Taylor, in this particular field.

Among the impulses that carry us forward, none is patent for progress as the yearning for individual self-expression, the desire for creation of something. Perhaps the greatest human happiness is consciousness of worthy personal achievement. Here lies the great urge of the constructive instinct of mankind. But it can only thrive in a society where the individual has liberty and stimulation to achievement. Nor does the community progress except through its participation in these multitudes of personal achievements.

Furthermore, the maintenance of productivity and the advancement of general standards of scientific, professional, and spiritual life depend upon the ever-renewed supply, from the mass of those who can rise to leadership.

Our social, economic, intellectual and scientific progress depends upon preservation of the individual liberty of the members of our profession.

This liberty is being threatened by State Medicine, Government subsidies, pernicious legislation, school propaganda, cultism and many other such dangers, all of which are instituted and fostered by an increasingly large class of fanatics, mental abnormals, moron notoriety seekers, emotional perverts, and many laymen who are perhaps normal, but who without any special or scientific knowledge deem themselves capable of judging of medical matters and proceed to constitute themselves judge, jury and special executioner.

Too much credit cannot be given our editor, Dr. Whalen, who has provided us with the greatest State Medical Journal ever issued. It contains more than half of all the worthwhile literature in this field that is published, and most of it is written by Dr. Whalen himself. Dr. Edward Ochsner, our incoming president, has won our earnest gratitude by his capable help in this field.

We can be of practical help to the Journal by purchasing, when possible, instruments and other supplies from the dealers who advertise in the Journal. Especially can hospitals and hospital staffs assist in this way.

The Legislative Committee, after an enormous amount of work at great personal sacrifice, have protected our interests from vicious legislation and prepared a bill for a new medical practice act and followed it through trying and tiresome weeks in the Legislature with but little help from a discouragingly small number of the profession. Many of us seem to have toward the protection of the welfare of our profession the attitude of an excursionist toward the running of the train that carries him. As the excursionist relies upon the engineer, the Doctor relies upon the legislative committee, refusing to interest himself or help, even when the members of the legislative committee frantically appeal to him for help.

We have long realized that we were without the necessary organization and resources to cope with either the existing apathy or the seductive teachings of false doctrines whose alluring appeals are spread broadcast through extravagant and sensational articles. The difficulties of the situation have long been apparent, and unsuccessful efforts made to find a way out. A way has now been found, it is believed, through the lay educational movement.

If you will heartily support this activity of your council, and your members will generally contribute promptly their ten-dollar checks, the

*Delivered at the 73d annual meeting of the Illinois State Medical Society, at Decatur, May 16, 1923.

work of this new and important committee will be made much easier, and much more effective. I feel sure that this support will be forthcoming cheerfully and enthusiastically.

The passing of our beloved friend and confrere, Dr. C. W. Lillie, ex-president and for many years a councilor in our Society, has saddened many of us. He was not only a loyal friend of our State Society, but a warm personal friend to many of its members and his absence today causes us to pause in grateful remembrance for his years of devoted interest.

Among the happiest memories of the past year are those of new friendships gained, and of old friendships strengthened. May the coming year bring each of you richer blessings in friends, health and professional achievement, based upon an honest development and service.

I want to call to your attention a subject that has too long been ignored and neglected.

It furnishes proof to all who read the newspapers that the experts of our profession always disagree. It furnished copy for humorists and story tellers. It day by day suggests to every lawyer and judge that we are never agreed, therefore, not worthy of confidence. It furnishes evidence that cannot be refuted for everyone who desires to criticise our honesty and our integrity. It clogs the wheels of justice, prevents the courts from using logically and effectively one of the most valuable means in many cases of arriving at facts.

It is of most vital importance to many defendents and often to the cause of justice. It directly concerns only a few physicians, but indirectly all of us, for it is the cause of widespread lack of confidence in the character of ourselves. It is deplored by lawyers, judges and every thinking member of our profession. It is the result of laws and customs that have too long remained unchanged. I refer to:

The Medical Expert Witness Situation

According to Wharton, the great legal authority, "the distinction between expert witnesses and ordinary witnesses is this: the non-expert witness testifies to conclusions which may be verified by the adjudicating tribunal: the expert gives the conclusions which cannot be so verified. The non-expert gives the results of a process of reasoning which can be determined only by special scientists." (1 Wharton on Evidence, Section 434.)

And again, "Where conclusions depend upon facts whose evidential weight can only be determined by those familiar with a particular specialty, then these conclusions must be given by experts in such specialty." (2 Ibid., Sec. 437.)

In Europe. According to authorities upon medical jurisprudence, it is the function of the expert witness to reason about facts, to explain their connection with one another, to draw conclusions and inferences from them, and to thus perform part of the duty usually devolving upon the court or jury. His position, therefore, should be essentially judicial. In some European countries, notably France and Germany, such is the case. The expert is a part of the judicial system. He is an officer of the Court and treated as such. Many men such as Dr. Casper in Germany, and Fordere and Pinnell in France, have acquired high positions in the public estimation and in that of the courts. They are free from partisan bias, possessed of great judgment, a judicial mind, scientific experience and knowledge, and their expert opinions upon the questions submitted to them occupy a position like that of judicial opinions in weight and decisiveness. The judicial mind and unbiased judgment of these men were to their advantage as medical expert witnesses under such conditions.

In America. The same qualifications would not make Caspar and Pinnell sought after in this country. In this country the medical expert witness is chosen by the partisan lawyer, not for his judicial mind and his correct judgment upon the point at issue, nor for his great skill and discernment, but rather for the partisan service that he can render by giving such testimony as will influence the jury.

In this country the testimony of a medical expert witness is not a judicial opinion. He has no power of decision. The entire court procedure is founded upon the assumption that after hearing the medical experts employed upon both sides of the case the jury will be enlightened enough upon the pertinent scientific and the technical matters to make a decision themselves. At any rate, they are supposed, from the appearance, deportment, and testimony of the expert witness, to decide as to whether his testimony or that of the expert witness for the opposing side is the truth.

I think it will be conceded that expert witnesses in the country are of two classes, honest

and dishonest. Of the dishonest ones we have nothing to say. We wish to discuss the honorable, upright, medical practitioner who is employed by one side in the controversy; who is not an officer of the court, but who must necessarily approach the question from the partisan angle. At times it is essential for him to testify as to whether or not a person was angry, or intoxicated; whether or not the mental state, while under observation or at some previous time, was that of a sane or insane person; whether or not the subject is suffering from some perhaps obscure physical ailment causing disability; whether or not pregnancy is present, and sometimes whether or not such pregnancy, disability or even death, is due to the action of another.

The Conditions Necessary. It is obvious that a correct opinion upon these delicate and obscure questions can be formed only after thorough examination and complete investigation and after every phase and every fact of the situation is known and considered by a competent, unbiased, mind. It is conceded by all medical men that a correct opinion, or in medical terms, a diagnosis, of physical and mental states, cannot be made if the diagnostician approaches the subject or the patient with a prejudiced mind. Every point of the investigation must be made, the examination of the patient complete, and all discoverable facts of every kind brought together and considered before the diagnostician can make a diagnosis. Then further investigation may be made in an attempt to either prove or disprove his conclusion. His interpretation of every fact brought up for consideration must be that of an unprejudiced mind if his final diagnosis is to be correct. Not only is this necessary, but the surrounding circumstances must be such as to permit the diagnostician's mind and judgment to operate untrammeled. A diagnostician can always operate with greater reliability when he has the patient in the hospital, clinic, or same environment in which he usually does his work. The field of medical diagnosis is so large and extensive that it is usually necessary for a complete diagnosis that the diagnostician have some assistance from nurses, laboratory workers, other physicians, or other assistants or observers. It is needless to state that any diagnostician can make a diagnosis with more certainty when aided by his regular assistants. Only by having the patient in a favorable environment and under conditions that are favorable to good work, and with sufficient assistance, can any diagnostician whose sincere object is to arrive at the actual facts, make a diagnosis and give an opinion in regard to mental and physical states in obscure or disputed cases that is worthy of confidence or that should be given a place in any proper legal proceeding. *Without a correct diagnosis the medical expert is a false witness.*

Conditions As They Are. But it is unfortunately true that under present conditions in American courts, these conditions of insuring correct and impartial judgments by the medical expert witness are sadly lacking. Approaching the subject from the partisan standpoint, with a necessarily biased mind, as the medical expert witness must do, precludes the formation of a correct, judicial opinion.

Medical experts should be court officers, appointed by the courts and permitted to make use of every means that is employed in their private or hospital practice to assist them in forming correct diagnosis or opinions. In case the experts disagree, the courts should appoint other experts, for it is preposterous for the courts to ask uninformed jurymen to judge correctly when honest, well-trained specialists cannot agree. But until the courts of this country adopt some logical and reasonable means of securing the proper and necessary conditions for the formation of unprejudiced and scientific opinions, the work of the medical expert witness must be severely hampered and the value of his work unjustly limited.

This is our responsibility. The lawyers and judges will welcome improved methods of utilizing real experts. They are not satisfied with present conditions. Shall we unitedly raise our voices to the end that new methods may enable our experts to further the cause of justice, not clog its wheels, and that the Medical Expert may be the means of our profession regaining the confidence of the people in the wisdom, honesty and integrity of its members?

ADDRESS OF ACCEPTANCE

EDWARD H. OCHSNER, M. D.
CHICAGO

I see before me many men who have attended innumerable installation exercises and I shall not make any lengthy address, but instead ask you to harken back to the flights of oratory which you have heard on previous similar occasions

and while you are thus pleasantly occupied I wish to make a few simple statements. I will try to uphold to the best of my ability the traditions of the past and at the same time maintain an open mind for new things as they may present themselves. I will try in the future as in the past to work for the welfare of the whole profession, to help lighten the burden of the most humble member, to encourage the leaders in every worthy undertaking and to swat in season and out of season those pestiferous uplifters whose principal purpose in life seems to be to pauperize the public.

It was hoped by all that this might be a time for felicitation and for rejoicing in that we might be able to report the passage of a medical practice act with real teeth in it and also an act which would prevent scandals in the Department of Registration and Education such as have occurred in the recent past. in order that the health and lives of the people of Illinois might be better safeguarded. The organized profession has also made a valiant fight to prevent acceptance of the provisions of the Sheppard-Towner Bill. Your acting officers, your retiring president, your secretary, your editor and the members of your legislative committee and many volunteers, have made a determined fight at great personal sacrifice to bring about these desired results. Their failure so far has been partly due to the fact that as usual the medical profession has not presented a united and determined front. We can never hope to make ourselves felt to the degree we ought to until we will learn to thrash out our differences within our own organization and then abide by the will of the majority. The medical profession is suffering from the same difficulties that our nation has always suffered in its periods of greatest trouble. Medical men as well as other citizens can be divided into three classes: a comparatively large group headed by a few indomitable spirits who work hard for the welfare of the whole, an equally large group who may be termed as slackers, and a comparatively small group for whom we can scarcely find a suitable name; reactionaries, soreheads, tories, are hardly strong enough terms. The term "traitors" may be a little too strong. However, so long as we have the last two classes in our midst progress for the medical profession is going to be slow and difficult. May I urge you, the workers, to go home, stir up and encourage the slackers to greater effort, and administer a few private lessons in good citizenship, patriotism and loyalty to our profession to the members of the last mentioned group, so that if they will not help the good causes along they will at least be compelled to desist in their acts of sabotage. If each and everyone of us will do this even at this late day, the causes for which we stand may not be lost and right may yet triumph.

SURGICAL JUDGMENT*

JOHN H. GIBBON, M. D.
PHILADELPHIA, PENNA.

To an audience made up of representatives of all the different departments of medicine, it seems hardly fair to present a purely surgical paper, which would appeal to but a small percentage of the listeners; and I have, therefore, determined to attempt to give you what would seem to me should be the characteristics of a surgeon of today and discuss his relation to the rest of the body medical.

No attempt will be made to indicate to you the great advances made in surgery during the past fifty years and its consequently greatly increased field. Those of you who graduated thirty years ago have witnessed the steady growth of the surgical domain and those of you who received your diplomas more recently are familiar with the history of it. With this change in the field of his activities, there must have been a change in the surgeon himself, and the surgeon of today and tomorrow must come to his work with a far wider knowledge and training than his predecessor of a generation ago. Formerly a practical knowledge of anatomy, a poorer one of pathology and a certain facility with his hands, together with a fair judgment as to when and how to use them, were considered sufficient to enable one to style himself a surgeon. No such equipment today would inspire sufficient confidence, even in the laity, to enable one to obtain recognition.

Surgery, like all other specialties in medicine, is best practiced by the man who has had the broadest kind of foundation in the basic sciences of anatomy, biology, physiology, chemistry and pathology, and who is familiar with the work

*Read before the Tri-State District Medical Association, at Peoria, Ill., Oct. 31, 1922.

being done in other fields of medicine. It is of course true, and it goes without saying, that he must possess dexterity and have developed a proper surgical technique, but these are the essentials most easily acquired.

"Surgical judgment" is an expression familiar to you all and is considered by the wise the highest compliment that can be paid a surgeon. It is supposed by some that this comes with years, that it attaches itself almost unconsciously to the man doing surgery constantly over a long period and that it is not a thing which can be taught or learned early. Let us entertain no such erroneous idea of this finest of qualities in a surgeon. This judgment does not rest on the number of operations performed or the years during which they have been done, but rather on the knowledge one has of normal physiological processes, of pathology and of general medicine. Experience, it is true, is the greatest of all teachers, but what is experience? It certainly is not simply time spent in an occupation or the amount of product turned out in a certain number of years. It is, I take it, the ability to observe, to estimate at their proper value the things observed, to consider them in relation to established laws and to remember them. It is also important to develop a philosophical mind and to pay constant attention to medical literature. The surgeon, who is so busy operating that he has not time for the proper pre- and post-operative study of his cases and who is too busy to read and to see the work of others, is a man of limited experience, however occupied he may be in the actual performance of operations. The man who has removed the greatest number of colons may be the best man one could have to remove his colon, but he might, if he does not possess the kind of surgical judgment we have in mind, at the same time be the worst man one could choose to determine whether his colon should be removed. This type of illustration might be applied to any field of surgical activity, I have only taken the colon as it has been much in the professional and lay mind in recent years. My own judgment would be that the removal of the colon to cure constipation is comparable to the removal of the ovaries to cure dysmenorrhea. How the fad of oophorectomy to cure all female ills survived so long is hard to understand. One can imagine the success of an attempt to popularize the analogous operation in the male! It is true that the normal testis has recently been removed, but only to be transplanted into a new and sterile field where it is hoped it would retain its fertility and give its host a new virility. But this is a long cry from the removal of both testes to cure backache.

The modern surgeon is exposed to temptations that he of fifty years ago did not know for now-a-days with a fair technique and an aseptic habit nearly any operation can be done without fear of a fatal infection. It is this degree of safety which exposes us to the danger of falling into the habit of doing unnecessary operations and developing a fad for doing a particular operation in the absence of proper indications, just because we do it well and with no mortality. A peculiar facility in the performance of an operation puts a surgeon too often in the category of the proverbial doctor who was "hell on fits."

The mere development then of the ability to perform certain operations with a fair degree of safety and the constant performance of them does not alone constitute experience, nor does it possess one of surgical judgment. To the ability to do the operation must be attached the knowledge which permits one to determine the indications for it in the individual case.

It is far more important to teach the student of medicine differential diagnosis, the indications for and against operation and to inculcate in him the diagnostic habit rather than to teach him the steps of operative procedures, because he naturally practices what he is taught. This admonition does not apply alone to those engaged regularly in teaching students, but to everyone having younger men working under him as internes and assistants; every such person is a teacher and is often the one who is listened to and observed with much more interest and attention than the man occupying a "teaching position." Every hospital surgeon should consider himself a disseminator of surgical knowledge, not a simple demonstrator of surgical technique. Many a young man's promising future in surgery has been thwarted by the careless methods employed by the man under whom he has served as an interne or an assistant. These young men should be taught surgical judg-

ment and should be encouraged to observe and record their observations, to exercise in every case under their care the knowledge which they are supposed to possess. If this is not done they naturally in most instances become careless automatons doing operations perhaps well, but regardless of conditions, taking out appendices to cure duodenal ulcer, doing gastro-enterostomy to cure the gastric crises of tabes, removing hemorrhoids for cancer of the rectum, performing Cesarean sections to save labor pains, removing colons to cure neurasthesia, plating fractures that need no plating, etc., etc. Such surgery and such surgeons do nothing to advance even the art, let alone the science, and do much to discredit real surgery.

The modern surgeon must be a diagnostican. The late H. C. Wood said the difference between a surgeon and a physician was that the one worked with his hands and the other with his brains. If this were ever true, it is not true today and it must not be true tomorrow. Medicine can only be advanced by the working together of the internist, the surgeon, the chemist, the pathologist, the physiologist and the roentgenologist, and each must work with his brains as well as with his hands; each in weighing facts and drawing conclusions must use all the knowledge he has and can obtain from others.

A diagnostic habit and ability must be early established and regularly enlarged by the would-be surgeon of today. Most of the mistakes we surgeons make result not from a lack of knowledge, but from a failure to use it. How many of us have not looked back with shame and chagrin at the removal of a primary malignant growth in the presence of a metastasis, the existence of which a careful examination or an x-ray study would have revealed. Or how easy it is to fall into the habit of doing "exploratory operations" to find out what a little study or the exercise of a little knowledge would have shown us.

The modern surgeon must not enlarge, but rather curtail his list of emergency operations, that is those done without a careful study of history, of signs and symptoms. A diagnosis should be made if possible and a relative diagnosis, if a positive one is impossible, and the reasons for it given. Hemorrhage and obstruction of the air passages stand nearly alone as indications for immediate operation. Never to worry one's mind about the diagnosis but simply to "open and see" often means unnecessary operations and does nothing to develop one's surgical judgment and enlarge one's experience. To make a wrong diagnosis is better than to make no diagnosis at all. If a young surgeon would write down his diagnosis, his basis for it and his reasons for operating in his first two hundred cases, and then his findings and results, he would possess more surgical judgment and experience and be a better surgeon than the man possessed of the same knowledge and same operative skill, who performed a thousand operations without this exercise of his brains.

Mark Twain said if one did not open his letters until two weeks after their arrival, only one out of ten would require an answer; if one studies his cases before operating he will certainly operate upon fewer and he will greatly reduce his surgical errors. It is the inexperienced surgeon or occasional operator who takes risks, and yet he is the last one who should. The difference in the mortality rates of certain clinics is not due to unusual skill or to the selection of cases, but to careful study and preparation. The time to obviate post-operative complication is before the operation.

I believe a survey of the recent contributions to surgical literature from the hands of men of recognized ability will show distinctly a tendency toward the development of surgical judgment. A notable example is to be found in the surgery of the breast. The man who removes a breast in a young woman for a benign tumor is not saving her from a cancer death, but is doing an unnecessarily mutilating operation, when a simple one would have relieved the patient of her trouble. I should like in this connection to endorse and emphasize the following paragraph from a recent paper by Peck and White—(Annals of Surgery—June '22); "We have long believed that unnecessary mutilation by the performance of radical operations for these distinctly benign conditions was unwarranted, and speaks for lack of ability or confidence in diagnosis by the surgeon, rather than consideration for the future comfort and safety of the patient."

The removal of certain diseases from the cate-

gory of those requiring extensive, mutilating and dangerous operations and the putting of them in the class which can be cured by simple and safe methods represents real surgical advance. Take for example the so-called myeloid sarcomata of the long bones for which amputation was considered, until recent years, the proper treatment and compare this operation with the simple removal of the growth which recent study has shown to be quite sufficient, as the tumor is really not malignant. Again think of the amputations and the resections of joints in our civil war and then of their comparative rarity in the recent great war.

And I would cite one other recent example of surgical advance and the exercise of surgical judgment. Up to the time of the great war there had been developing for years a tendency to operate upon and plate most simple fractures, a pernicious tendency which it seemed nearly impossible to stem, but with the enormous experience afforded by the war it was easily shown that this method of treatment should be greatly curtailed and we passed back to the use of our brains and revived the mechanical and anatomical knowledge in the treatment of fractures which, for a time, many of us had lost in our craze to apply a plate. There are enough fractures requiring open reduction without operating on those which do not need it. I should like too to suggest in this connection that open reduction need not necessarily be followed by a plate or other device, and the surgeon must have the judgment to determine the necessity for this second step and the courage to avoid it, if deemed unnecessary.

Before a surgeon undertakes the operative treatment of fractures, he should have learned by experience and by reading what nature herself can do, if only given a little intelligent help; what she can do alone, as is shown in the rare instances of non-union in animals like the dog and the birds; and how she is apt to lay down on her job when the matter is taken entirely out of her hands by the absolute mathematical immobilization of the fragments by a plate. I should like to emphasize three things said by Doctor Dodd in his communication. First: that the plate is a cause of delayed union and sometimes of non-union, and his skiagrams illustrated this. Second: that plates should be removed when they have produced enough fixation to allow their removal without disturbance of the position; and third: the great importance of early motion of neighboring joints and muscles. We would all, who work in this field, do well to go back a generation in surgical literature and read Lucas Championiere and study his method of mobilization in the treatment of fractures. This field is one of the best in which to cultivate and develop surgical judgment.

The surgery of the future is not going to rest on further development of surgical technique or the invasion of new fields, but on an increased knowledge of disease, its causes and manifestations, and the men who are going to advance surgery are those who learn early in their careers to use their brains as well as their hands, and who make their brains direct their hands.

The day is passed, if it ever existed, when a surgeon must do a certain operation at the request or direction of another and the surgeon of today who operates for any other reason than that he believes the operation indicated, after a careful study of all the facts and evidence, or who operates on the judgment of another, becomes a menace to society, a disgrace to surgery and a man without the respect and confidence of those who are able to judge ability. A surgeon must be courageous enough not to fear the charge of timidity, when it is based on the exercise of surgical judgment.

Self satisfaction, which is always based on a lack of knowledge and experience, is a dangerous characteristic in a surgeon, especially a young one, for it usually means arrest of development. It is only dissatisfaction with one's accomplishments which stimulates him to effort. Self confidence in a surgeon is, however, an asset and does much to help him through difficult situations and to devise new methods.

In conclusion I would suggest that the surgeon who does an unnecessary or wrong operation should be obliged to look after the patient for the rest of his or her life and not be permitted to turn the patient over to the long suffering family physician. If this plan could be put into practice and if all surgeons studied their mistakes and their ultimate results, surgical judgment would be a common characteristic and surgery enormously advanced.

CERTAIN FACTORS TO BE CONSIDERED IN JUDGING THE EFFECTS OF PROHIBITION IN RELATION TO THE USE OF NARCOTICS*

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The history and record of the development of the present narcotic situation, if it were more widely known and appreciated and the scientific literature on the subject of narcotic addiction more widely known and recognized, would make any query as to alcohol prohibition laws having any effect upon the use of narcotic drugs unnecessary.

In my ten years of experience and contact with this subject in the capacities of state legislator, doctor, medical journal editor, and Congressman, I cannot recall of any reputable authority on this subject of narcotics and addiction making a statement to the effect that prohibition would or had increased or influenced the spread or consumption of narcotic drugs.

Indeed, every report or survey entitled to scientific credence and the foremost scientific authorities on this subject, either men of personal experience in clinical work or of study into its history and literature, have, I believe, emphatically declared that the coming of the prohibition amendment has had absolutely nothing to do with the development of the present narcotic drug situation and conditions.

Moreover, the actual elements and factors in the causation of existing narcotic conditions are so completely a matter of record and so incontrovertibly to be traced in that record, that it is absurd to look outside of the narcotic drug history and record of the past ten years to find the incontrovertible machinery of development of the present situation.

To one at all conversant with the history of the past twelve years, with its various promotions and experiments and publicity and propaganda in this matter of narcotics, the absurdity of the claim that prohibition has had any effect in the causation of existing narcotic conditions is apparent in the fact that *the present narcotic conditions have been developed by the same factors years before there was either a national prohibition, or serious talk of it.*

The first development and spread of smuggling and peddling came in New York State following sensational publicity and the enactment of the Boylan Law in 1914.

It is more than a coincidence that the sort of advertising and sensational publicity which has always preceded this type of legislation, has also always been followed by the development of underworld commerce and spread of addiction of non-therapeutic origin, among the youthful and curious.

The events of 1914 on a smaller scale in the State of New York, exactly follow the history of identical forces exerted since 1919, which is the period in which the present situation was developed.

The record of this is so voluminous that it is not necessary to do more than state the fact in this place and call attention to the fact that there was at that time no prohibition of alcohol, so that the crisis and beginning of smuggling and peddling and spread of addiction among the youthful could not have been attributed to the Eighteenth Amendment, which was not to exist for another six years.

In what is undoubtedly the most scientific and accurate analysis in the form of official report coming from a standing committee of any scientific organization, the Report of the Narcotic Committee in the American Public Health Association, rendered October, 1919, is stated,—

> We would emphasize the fact that cocaine, alcohol and other drugs of indulgence do not fall into this definition (of opiate addiction) and they and their problems of handling, treatment and control are entirely different and distinct from the matter of opiate addiction-disease.

(This report appeared in the *American Journal of Public Health,* January, 1920.)

Dr. Charles E. Terry, Executive of the Bureau on Narcotic Drug Research, of New York, stated before the hearings on the recent Porter Resolution, —

"I do not think there is any connection between prohibition and addiction."

In *American Medicine,* Special Narcotic Number, December, 1917, is contained a preliminary report by the Whitney New York State Joint Legislative Committee, which carried on for two

*Speech in Philadelphia, Pa., April, 1923.

years the only open and exhaustive investigation yet made on the subject of narcotics, and a remarkable clear analysis of the situation and its causes and development since the passage of anti-narcotic legislation in 1914.

No mention is made in either of these most reliable and authoritative statements as to any relation between alcohol and narcotic drugs.

The final report of the Whitney Committee, in 1918, confirmed the findings of its preliminary report.

In the *New York Herald,* November 22, 1920, is stated as follows,—

"Dr. Ernest S. Bishop, the well-known diagnostician, whose experience with alcoholics and drug addicts has made him an authority on the subject, says that there are more drug addicts today than ever before; and that there is more illicit drug traffic than ever before.

"However," says Dr. Bishop, *"this increase is not because of the enactment of the Eighteenth Amendment.* Prohibition has nothing whatever to do with it."

As Dr. Bishop is recognized as the best authority on the subjects today, this statement alone must be regarded as practically *ex cathedra* announcement.

I might go on and quote at great length from other authorities and reports to the same effect. It would be, however, redundant repetition of what is regarded among all qualified and informed persons as axiomatic fact.

The problems and facts of the effects and use of alcohol are utterly different and absolutely unrelated to the problems and facts of the opiate addicted.

They have no sociological, pathological, psychological, physiological, or clinical similarities,— and there is no basis for the statement that the indulger in the one would turn to the administration of the other, in the expectation of substitution effect or replacement of stimulation.

It is also doubful if there has been any real alcohol prohibition in effect, so that the necessity for any such hypothetical substitution has been absent. It is said to be far easier and much less expensive to obtain alcoholic liquor than it is to obtain narcotic drugs.

It is not enough to deny a proposition without furnishing evidence as to some of the facts concerned in the history and machinery of actual causation in the drug situation which it must be admitted has come to exist.

In an editorial in the *Medical Economist* of June, 1918, concerning the newly enacted Whitney Law and Commission in New York State, I predicted,—

"This law will prove a wise and efficient advance in the solution of the narcotic situation, *if it is wisely and efficiently administered.* If it is not so administered, there are the gravest possibilities of a repetition of the 'reign of terror' which followed upon and was the result of the ignorant and incompetent interpretation and administration of the first New York Narcotic Law, the original Boylan Law."

Concerning the fulfillment of my editorial prophecy, Judge Cornelius F. Collins, Chairman of the Narcotic Committee of the Judges of New York State since 1914, stated in a speech before the National Police Conference, and appearing in the *National Police Bulletin* of August 23, 1921:

> We established a State Commission. It started to make regulations. The Board of Health persuaded them to make regulations and they placed restrictions around the doctors that made them stop practicing. My theory was followed out again that as soon as the doctors were stopped practicing medicine in this connection and stopped treating the addicts—then came the underworld peddlers and all the underworld terrors that we feared.

This, Judge Collins points out, in a letter to the *Medical Record,* October, 1921,—

> is not due to failure of the statute, but to the enforcement of promulgated rules and regulations which were in some instances in their effect tantamount to repeal of the law and contrary to its intents and purposes.

The same explanation with elaborate speeches is contained in my own Congressional House Resolution No. 258, which has been endorsed at their last annual conventions by the American Medical Association, and the other important national scientific bodies, and must therefore be regarded as the official expression of medical and scientific opinion upon this subject.

(See *Congressional Record,* January 12, 1922, and July 18, 1922.)

A most significant warning and prediction of the present situation was presented to the Legislature of New York State, and came from the judges of New York State in the form of a telegram of protest against what was known as the Cotillo Bill, which in 1920 attempted the reenactment of the provision of the old Boylan Law

under which smuggling and peddling and spread of addiction had its first serious impetus.

The telegram of warning and protest I quote from as follows:

The bill referred to would utterly destroy the constructive work of five years, including two years intensive study by Joint Legislative Committee.

Forbidding doctors to prescribe would threaten public calamity.

The underworld and illicit traffic would find a new and appalling impetus and violations of the law both as to the narcotics and crimes vastly increased.

This prediction and warning came from the Judges Association of New York State in March, 1920.

It has been most obviously and calamitously fulfilled.

As I said before its fulfillment is discussed at length in my Congressional Speeches and Resolutions above referred to, and by endorsement of the scientific bodies now made practically the concensus of opinion of the scientific profession.

These above quoted and other expressions of warning and expositions of fulfillment are reinforced by recent declarations coming from the Assistant Attorney General of the United States, John W. H. Crim, from whom I quote his official utterances before the Committee on the Judiciary, January 23, 1923, and the Committee on Foreign Affairs, February 14, 1923. Speaking of narcotics and addition, he says in part:

It is a problem for which we have no foundation in penology today.

It is today very largely a pathological matter.

The law *has been directed* at preventing physicians from selling narcotics and by the same token has forced the addict into a criminal atmosphere to get them.

All of which has stimulated the trade and occupation of the smuggler.

The war is very much responsible for the stimulation of the narcotic traffic.

Many of these boys were over there in the trenches. They received narcotics in their treatment. They came back here as addicts. Among those who had been discharged from the Army, there are a great many.

I had a gentleman come in here yesterday, and his brother is an addict. It started in an Army Hospital.

This young man is searching around trying to find somebody who can tell him what to do, whether there is any hope or not.

We are in the dark until the medical profession tells us what is to be done.

I am absolutely at sea for the reason that fundamentally it is a pathological matter, and until the medical profession and the scientists tell us what to do in handling these people, we are not going to make much progress.

I feel that the present law regulates and reaches the better class of physicians. If anything, it has caused the more competent physicians to take the position that they would not administer narcotics, and has driven the addict ultimately into crime itself.

That occurs too frequently under the present law (or rather the present rules and regulations and interpretation of the law). That addict is gradually driven to the underworld, where you have not only the crime of buying and selling narcotics, but every other sort of crime, and there he buys his drug. In a little while he has no legitimate source of income whereby he can procure the drug at the prices, exhorbitant prices he is required to pay in the underworld. Then he goes to stealing, robbing, burglary or some other means to get funds to get this drug, or he buys a bottle of it and sells out a part of it so that he may get his drug in that way, and you drive that fellow right into prison.

You ask me what to do? I tell you frankly, I do not know. *It is a problem that the lawyer cannot answer until he has more reliable information from the medical profession.*

I want more investigation by the scientists on the drug addict. Now, as to what can be done with him and what ought to be done with him.

We have the depraved man and the degenerate, and it would be just as well to exterminate them, but if these people can be cured, if these people can be prevented from becoming criminals, if they are merely sick people—as a very large number of scientists believe—the way to treat a sick man is not by criminal law, and we take that addict, put him in prison, keep him there during his sentence, let him out, and too frequently he is back again in a short time; and ofttimes when he first went to his physician, he was a man of high ideals and high character.

Assistant Attorney General Grim has tersely and accurately re-stated the contentions of the medical profession (except for a small group), as shown in many places and in my own speeches and resolutions, now endorsed by the medical men and organizations of this country.

In conclusion Mr. Crim says:

I do not want to be dogmatic. I do not want you to feel, Mr. Congressman, that I am certain. I think the data we have been working on, the literature we have been working on, is data that may be found later to be the wrong theory.

The concluding statement of Mr. Crim as to the error of the data upon which the law has been interpreted and administrated for the past

three or four years is the crux of the narcotic drug situation today.

For adopting false data and ignoring scientific literature and experience and record and facts, the administrators of the law in the past four years are not, however, to be entirely blamed.

They have been misled as has a large part of the general public by insistent promotion and propaganda and publicity which has advertised the sensational or the misleading generality deduced or manufactured by incompetent groups from non-representative cases.

They have been misled by meaningless words and phrases and slogans, coming from inexperienced and unqualified persons who have paid no attention, apparently, to the mass of reliable experience and literature and record, easily available.

This has been gone into so fully in many places, including my own speeches and writing, that I shall not take up space for it here. I will merely say that *if there had been one-tenth as much publicity for facts as there has been for incidental spectacular morbid details and for catchy slogans and for false panaceas, there would be no drug problem today.*

In other words nine-tenths of the available,—and practically all of the useful information has been suppressed and kept from administrative recognition for the past three or four years.

The solution of the narcotic drug problem today lies in the encouragement and dissemination and common sense application of all information and experience,—just as,—

The existence of the narcotic drug situation today lies in the suppression of nine-tenths of the available information and experience.

As, Mr. Crim has said, the law *"has been directed* towards the elimination of reliable medical and scientific work and progress and education in the subject of narcotic drugs and narcotic drug addition.

At the close of the two years New York Joint Legislative Investigation, its Chairman, Senator George H. Whitney, summed up the findings of the investigation as to addiction in the following words:

The cause of which is ignorance,—the results of which are misery,—the remedy for which is education.

In the neglect of these findings of the only open and complete investigation ever made into this subject,—and in the substitution therefore of what the Legislative Report of the Medical Society of the State of New York, at its annual convention in 1921, designated as "formularizations" prepared *"ad hoc* by ten men in the medical profession and a couple of lawyers," with no qualifications except ignorance upon the subject under consideration, and as has been shown, their appointment to various interlocking committees lies the answer to the suppression of information for which the Assistant Attorney General and all other honest inquirers for truth are now seeking.

In the place of consideration of and attention to the real problem of narcotics and addiction has come a few broadcasted and propagandized "formularizations" incompetent in origin, misleading in substance and prestentation, and useless and calamitous in application.

Among other things the idea that narcotics (opiate) addicts in general are degenerate and criminal is a promoted fallacy of great viciousness.

Also such misleading or unfounded phrases as "ambulatory treatment," "hospitalization," "satisfaction of craving" and the handful of other phrases which have been cleverly used as propagandic slogans and false or misleading definitions, distracting from urgently needed real work, real education and real issues, must be in the light of available medical and sociological facts, relegated to the history of a promoting and hysterical past.

We must eliminate the promoters of spurious or unworthy specific so-called and so-advertised "cures" and "panaceas",—drive out the political and commercial exploiters and encourage the physician, medical workers and students, to once more take up the study and treatment of narcotic addiction.

The most reliable estimates from many sources (contrary to some of the propagandized statistics from certain sources) place the criminal or degenerate type of addicts as from twenty to ten per cent of the total so afflicted. This is about the same percentage of criminal or degenerated individuals as would be found in all other medical conditions.

In other words, the real practical problem of the narcotic drug situation,—*the problem which*

is absolutely neglected today,—is the immediate humane and scientific medical care and so far as possible, cure of from eighty to ninety per cent of those afflicted with opiate addiction,—people who are decent and respected in their communities.

Ignore this and drive out the available humane and scientific medical care and you create a condition which has repeatedly shown as inevitable effect, in every survey, report or investigation of reliability and honesty and competency,—and finally by the United States Assistant Attorney General himself.

You create and force patrons and customers for the spurious advertised "remedies" and "cures" and for the criminal vendors of the underworld,—and you increase smuggling and peddling and the corruption of officials,—by creating necessity which is immediately capitalized in immensely profitable illegitimate enterprise and exploitation of the neglected needs of suffering humanity.

This is the real basis for the present situation.

There are two fundamental issues, irrespective of all the quibbles and sensational publicity promotion of morbidness and other manifestations of these periodic outbreaks which always end in creating the *drug situation,*—two fundamental issues to which sooner or later there has always been forced a return of consideration;

1. How can we best take care of the narcotic addicts we have?
2. How can we best prevent the making of more addicts?

The traffic whose commercial extension is making more addicts today, was created by the closure or obstruction of legitimate medical channels of study and treatment and education and, as Mr. Crim has pointed out, by the driving away of the family doctor from the care of the addicted individual.

Wise and sane administration and interpretation of laws aided by truly educational publicity, has at times succeeded in interrupting and checking this underworld traffic by which the non-therapeutic addiction patient is created.

A certain amount of unavoidable opiate addiction through necessarily prolonged opiate medication, is conceded by all reliable authorities and students to be inevitable.

(The case of the returned soldier addicted during treatment in a hospital in France, is an illustration of this,) as are also some cases of cancer, operative conditions and prolonged medical emergencies in civil life and the ordinary practice of medicine.

Nobody but a fool, a promoter, an ignoramus, or a medical or political quack would make any statement to the contrary.

There are conditions and facts which sooner or later we have to meet, and one of them is that the continued administration of an opiate drug, under whatever conditions, invariably results in the formation of a physical condition which can be met or cured or cared for by neither rules and regulations, sensational publicity, exhortation or any other of the repeatedly offered and promoted panaceas.

The sensational publicity and some of the unjustified restrictions, periodically given to, or based upon the morbid aspects of the ten to twenty per cent of addicted individuals, who are admittedly criminal or defective individuals has served only to create hysteria and panic,—to drive out medical and scientific progress and education and honest work and to advertise and renew and enlarge the business of the underworld exploiter and the corrupt official and the quack.

Cut out the profit for the underworld and criminal traffic and you make no new addicts through what is today the most prolific machinery of their creation. Where there is no profit, there is no market for the smuggler and the peddler, and no incentive for them to extend their business.

Encourage honest attention by the family physician to the needs of the innocent afflicted, made so by unavoidable or necessary medication or by the ignorance or suppression of education which promoted sensationalism has caused and made to persist.

Thoroughly and relentlessly investigate the acts concerning all "institutions" or so-called institutions, which are treating these patients, and make their treatment conform to the same standards of humanity and medical competency that are demanded and recognized in the treatment of any other diseases.

The history of institutional treatment in a majority of cases has been shown by every com-

petent investigation to be incompetent and abortive of results.

Open up the avenues of reliable information and progress and education for the medical profession and stop their being controlled and terrorized by the incompetent or the dishonest.

If you do these things (as has been repeatedly shown) you take out of the clutches of the underworld and the ignorant or exploiting official, eighty to ninety per cent of its possible patronage and all of its profit.

For its real profit does not come from the much advertised ten to twenty per cent criminal type of individual addicted, but from the neglected honest and self-supporting person addicted whose family physician has been forced to abandon them and they forced into channels of exploitation and extortion.

Let the police take care of the ten to twenty per cent criminal or degenerate addicts. Let the medical profession,—the family physician, the provenly competent hospitals and scientific institutions take care of the honest addicted persons on the same basis and in the same way as they would any class of honest afflicted.

Get the only profession that can solve medical problems and care for the sick back into work in its legitimate and proper sphere without danger of oppressive administrative interference and ignorant or instigated over regulation.

If you do these things you at once eliminate the profit from illegitimate channels of charlatan exploitation and solve the problem of smuggling and peddling.

This was the concensus of study and experience and investigation at the end of 1918, and is unquestionable preponderance of reliable opinion today. The utter failure and disastrous results of the administrative and other experiments of the last three or four years which have ignored it, have established its fundamental importance in the control and remedy of the drug situation and its problems beyond all honest question.

The ignoring of the real needs of the narcotic drug *problem* have created the narcotic drug *situation*.

The enactment of the Eighteenth Amendment, or any other legislation concerning alcohol,—had and have nothing whatever to do with it.

32 Court Street.

SMALLPOX—ITS DIFFERENTIAL DIAGNOSIS*

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At the present time there is no disease more worthy of serious consideration than smallpox. It is well known, that previous to the days of vaccination, this infection was one of the common ailments of childhood; that it was, in fact, on a similar plane in its age-period and frequency with measles of today. However, vaccination has changed all this to such an extent that in recent years we have come to regard smallpox as a comparatively rare disease of adult life.

Nevertheless we are now being confronted with a hazardous situation. Owing to the various species of anti-vaccinationists which have sprung up in different sections of the country, and due to some strange pressure which these misguided people have been able to exert on weak-minded legislators, real opposition to the greatest truth in medicine has become manifest in some of our states. As a result, there has been not only a vast increase in smallpox morbidity, but the proportion of cases among children has been multiplied many fold. Even here in Chicago this change in age incidence has been markedly evident. Consequently the question now confronting us is, shall the medically ignorant push knowledge and scientific facts to the background, in order that smallpox may again head the list of the common diseases of childhood?

All the foregoing remarks lead to the most important consideration in dealing with smallpox, namely, its diagnosis. We must recognize the disease if we are to prevent its spread. The fact that so many errors occur in this respect is not at all strange, for it is merely due to a general lack of familiarity with the infection. If smallpox were to again become as common as measles, there would soon be little difficulty in determining the nature of the eruption when met with.

Although smallpox has been attributed to a protozoon, we are not yet definitely sure of the organism. The incubative period, when possible of accurate determination, is found to average from 12 to 14 days. Rarely it may be as long

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as 21 days, which is the greatest duration for any case coming under my personal observation. On the other hand, incubation periods of but 8 to 10 days seem possible, even if not frequent.

The onset of smallpox is abrupt. Commonly it is ushered in with a chill or, in children, a convulsion, though sometimes there are but chilly sensations. In the great majority of cases, the attack starts in the late afternoon or evening, very much less often in the morning hours. A rapid rise in temperature to 103° or 104° may be noted. The pulse is full and rapid. Intense headache, which is usually frontal, develops and vomiting or nausea almost invariably follows, though possibly not until the next day. There is also backache, especially in the lumbar region, aching pains in the legs, and sometimes excruciating epigastric pain as well. The patient frequently states that he aches all over, and may add that even his bones ache. Although constipation is the rule, diarrhea sometimes occurs.

During the second day of the onset, the vomiting may be recurrent and the temperature may continue to rise, attaining at times an elevation of 107°. While a flushed face and hot. dry skin are common, yet again marked sweating may occur. Delirium may also develop, or the patient may merely present a picture of extreme prostration.

On the third day, headache, general prostration, perhaps sweating and fever, are the chief symptoms. But by the morning of the fourth day, in most instances the patient feels (if a discrete case) remarkably improved. Commonly he is free of his agonizing symptoms and his temperature will usually be normal, or approximately so.

The patient's own diagnosis of his ailment thus far is almost invariably grippe or influenza. And it should be remembered in this connection, that a white blood count during the prodromal period just described, will show an absence of a leucocytosis, even though the temperature be 107°. In confluent cases of smallpox, there is usually but slight remission of the fever when the eruption appears. Another symptom which may make its appearance at this time, and which is much more common in the colored than in the white race, is salivation.

The prodromal rashes which may resemble either scarlet fever or measles, when they occur, may usually be seen on either the second or third day of the disease. When one or the other of these rashes is present, it is most marked about the axillary regions, inner surface of the thighs, and perhaps the lower abdomen. An initial rash of either type fades out as the true eruption makes its appearance. Such rashes are said to occur in from 10 to 16 per cent of cases, but I think these figures too high.

With the appearance of the eruption on the evening of the third or morning of the fourth day, a slight sore throat is frequently complained of, and may be explained by the development of the eruption on the mucous membranes.

On the skin, the lesions first make their appearance in the most vascular regions—not necessarily on the forehead along the hair line, as so commonly stated. Sometimes the first lesions noticeable will be about the genitalia, or at the site of some recent injury, as a scratch or cut, or at any point where there has been some irritation of the skin, whether from an article of clothing or from an applied remedial agent, as a liniment. And it should be borne in mind that the initial symptoms are in no sense an indication of the type of eruption which is to follow. A most violent beginning may be followed by a numerically mild eruption, or the reverse may be true.

On the first day of the eruption, the patient himself, many times, feels so well that he is not aware of the fact his real troubles are only just starting, but rather believes he has fully recovered from a severe though brief illness. It is not at all unusual for some friend to call the patient's attention to the eruption which is developing, or the patient himself may only make the discovery when shaving on the following day.

On the first day of the eruption, however, which is usually the fourth day of the disease, the lesions are macular, and in their first appearance somewhat resemble rose spots. They rapidly become papular, however, and the trite expression "shotty feel" may be aptly applied. From the third to the fifth day of the eruption, the papules undergo change, becoming vesicular. These vesicles are ordinarily small, are seen to have a thick covering and ruptured only with great difficulty. Within twenty-four hours of the time that vesicles are detected, you may find umbilication of the lesions, if you care to emphasize this point as one of any great import in the diagnosis.

From the sixth to the eighth day, the lesions

become pustular, and with this change they have increased in size, presenting a full, tense appearance, with an inflammatory base or areola. The contents of the lesions have also changed from a semi-transparent fluid to a grayish yellow opacity. It is at this stage that the fever of suppuration is always presumed to make its appearance, and the popular view generally is that this fever is high and marks a critical period of the attack. Nevertheless, from my own observation and care of approximately 1,500 cases, I have found that the fever of suppuration is more exceptional than the rule in the average case of discrete smallpox. Nevertheless, at this time the patient experiences a sensation of tenseness and burning about the involved areas of the skin. Comparatively few sufferers complain of itching at this period, nor is itching a common symptom during the course of the disease. The temperature in mild cases frequently does not rise above 99° after the first appearance of the eruption, and in severe discrete cases it often only touches 102 for a day of the suppurative period. In confluent cases, on the other hand, the fever may never fall below 103° from the day of the first symptoms of the onset until death occurs between the ninth and twelfth day of the eruption, if the case terminates fatally. In severe discrete cases and in confluent cases, edema of the eyelids and entire face is marked by the fifth or sixth day of the eruption, and the throat symptoms may be so severe that the patient cannot even swallow fluids until this condition abates.

By the ninth day of eruption desiccation is seen to be well started and the drying of the lesions is quite rapid, especially about the face, during the next few days. In an average attack of discrete smallpox, the skin will usually be free of crusts within three weeks of the date of eruption.

Having referred to some of the principal symptoms of this infection, we may now mention a few of the diseases or conditions which may cause confusion in diagnosis:

In the first place, I think it may be properly said that a diagnosis of smallpox should be based on the picture presented to the eye, for I am assuming that no one can make a definite diagnosis of smallpox before the eruption is present. Furthermore, if the diagnosis is to be made on the patient's history, it is more than probable that error will result in at least 50 per cent of the conclusions reached.

In examining a case of suspected smallpox, close observation is of the utmost importance. If the patient shows evidence of a typical vaccination scar of comparatively recent date, variola may be almost absolutely ruled out.

Discrete cases will show the lesions predominating on the head and extremities, and this distribution of lesions in smallpox is one of the most valuable points in its diagnosis. The presence of lesions on the mucous membranes, on the palms or soles has not the significance which it often receives, for the same thing may occur in chickenpox, and, moreover, all smallpox cases do not have lesions in those locations. Smallpox lesions are all in the same general stage of development in any one locality at the same time. But development of lesions at one extreme of the body, as the face, may be twenty-four hours in advance of the other extreme—the feet. Although the lesions may have the appearance of shot underneath the skin, it is not necessary to find this out by tactile sensation, nor is it necessary to touch a smallpox case at all when making a diagnosis.

A common error is for one to believe that a smallpox patient should appear very ill during the first days of eruption. As a rule, this is only true in the confluent or hemorrhagic types. When a diagnosis has been made by observation the patient's history should be obtained for the purpose of confirmation.

During the onset or prodromal period of smallpox, influenza or grippe, is the most frequent d i a g n o s i s. Bronchitis, broncho-pneumonia or lobar pneumonia are also often blamed for the symptoms. Tonsillitis is still another disease for which smallpox patients have been admitted to private hospitals. Malaria and typhoid fever, with Widal positive, though the case is smallpox, are other sources of error. Owing to the marked delirium, which may set in early, various types of meningitis are sometimes suspected, or the headache may be attributed to sinus infection. Appendicitis, cholecystitis and various uterine troubles are still other conditions which have received serious consideration during the onset. The fact that there is no leucocytosis during the onset of smallpox will help eliminate some of the preceding, but will be of no value,

of course, where influenza, typhoid or malaria is viewed with askance.

After the eruption has made its appearance, we find that the ruling out of chickenpox is our most troublesome problem. This difficulty may be attributed to the fact, not that smallpox is hard to diagnose, but that we are not sure of our diagnostic ability in dealing with varicella. For if we are absolutely certain of our capabilities in recognizing chickenpox, it will be simplicity itself to rule out one of the two diseases under consideration. In working out such a solution, we know that the lesions of chickenpox predominate between the shoulders and knees, whereas smallpox lesions in the ordinary discrete type, are most numerous on the head and extremities. This one point is almost invariably sufficient to make a differential diagnosis where chickenpox is concerned, provided we have under consideration discrete smallpox. By observation we also note that the varicella lesions are flat, ovoid and superficial; that they occur in crops, and therefore present various stages of development, and that they rupture easily. A chickenpox patient usually feels worse on the day the eruption appears, whereas an average smallpox case feels better. The presence of a typical vaccination scar speaks against smallpox, while the history, or more properly the evidence of old chickenpox scars, tends to exclude varicella.

Measles, German measles and scarlet fever are especially suggestive in confluent smallpox. The absence of Koplik spots and catarrhal symptoms and also the age of the patient may be of value in eliminating measles. In the presence of a smallpox epidemic, a diagnosis of measles in an unvaccinated adult who presents no catarrhal symptoms should be made with caution.

Where German measles or scarlet fever are to be differentiated, the presence of postauricular glands in the former and a leucocytosis in the latter should be of assistance.

Impetigo, pustular syphilis, glanders, dermatitis herpetiformis, drug eruptions, typhus fever, ulcerative endocarditis, purpura, cerebro-spinal fever and generalized vaccinia are all diseases or conditions which have been from time to time confused with smallpox. And in regard to the last named, it should be particularly mentioned that a diagnosis of generalized vaccinia in an individual with a known exposure to smallpox previous to the date of vaccination is usually a decision fraught with danger. Under such circumstances a vaccination performed during the incubative period of smallpox may mature, and yet at about the height of its reaction a smallpox eruption may appear.

Since January first of the present year, we have had 71 cases of smallpox at the Isolation Hospital, with 13 deaths, or a mortality of about 18 per cent, which is the highest in many years for Chicago. The Kansas City mortality, during the recent outbreak, was approximately 40 per cent, and in Colorado and Oklahoma my information is that the death rate was still higher. We have had among our cases but two colored patients, one of whom, a woman 64 years of age, died. Forty of the cases were males and 31 females, so the sexes have been rather evenly divided. The ages varied from 10 weeks to 76 years. More than 50 per cent of the cases were under 10 years of age, approximately 40 per cent were under 5 years of age.

Among the 13 deaths, two were hemorrhagic cases, both women who had never been vaccinated. Five of the fatal cases were 6 years or under. Among the 13 deaths there was but one where the patient had made any claim to ever having had a vaccination. In this one instance, there was a faint, doubtful mark, which the patient believed was the result of a vaccination performed 35 or 40 years previously. Aside from the two hemorrhagic cases, the deaths were all from confluent smallpox of an extremely virulent type. All deaths occurred between the seventh and twelfth day of the eruption.

25 E. Washington St.

TUBERCULOSIS OF BONES AND JOINTS*

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We have seen very good examples of the surgical pathology of bone tuberculosis lately, and in view of that fact, perhaps a few collated facts on that very extensive subject may not be inopportune. The pathology is very interesting, but the many and varied pathological pictures afforded may prove somewhat tiresome. So I shall try to use my own language in describing much of the detail.

Tuberculosis of the bones and joints, in the great majority of cases follows slight contusions

*Read before Oak Forest Medical Staffs.

and sprains. Disease of the vertebra, of the head of the tibia, or in one of the tarsel bones may follow slight trauma from a fall or a wrench. The result of such injury is to impair for a time the circulation of the part, or I should say nutrition of the part in consequence of the impairment of the circulation. For this reason a sprain of, say, the ankle is perhaps of far more serious consequence than a fracture of the bone. Now if there were no tubercle germs in the individual there would result no bone or joint tuberculosis in such an individual. However, of those predisposed to the disease, in nine hundred and ninety-nine out of a thousand there are already tubercle bacilli floating in the blood or lymph stream. The germs may float individually or a great number may be set free from a gland that has caseated into the blood vessel. The tubercular affection may be multiple or in sequence, that is to say, a cheesy or scrofulous gland may give rise to a pulmonary tuberculosis, and from this tuberculosis of the bone or joint result. Or, the affection of the bone may follow the breaking of a caseous gland into the blood, and later that of the lungs may follow. However, there may be a single lesion or focus. This may heal —the lesion may become caseated or calcification and finally cicatrical tissue occupy the place of the tubercle.

A lesion may remain quiescent in this disease, and constitute an ever threatening danger. So that to my mind, in a predisposed individual, who has already manifested signs of the disease and who is believed to have a symtomatic cure, there is always a mental reservation as to the permanency of the cure. Of course, there are many people who contract tuberculosis who have done so merely because of continuous proximity to one afflicted with the disease, and these are the people whose cure we, as a rule, hear of.

Tuberculosis of the bones and joints is one of the commonest forms of tuberculosis disease, and it is therefore of great necessity and importance that physicians should understand it. However, it is (that is tuberculosis of bone and joints) nevertheless it is one which suffers greatly from the ignorance and indifference of those called upon to treat it. Great advances have been made in the knowledge of the pathology of the disease, and it is being more intelligently treated than it was twenty years ago.

The greater part of the cases of bone and joint tuberculosis occur in children and in youths. It was said by Billroth that one-half of all the cases occurred before the twentieth year. This is true of most joints—diseases of the wrist and of the shoulder are found mostly in adults. These two instances are usualy the seats of primary tuberculosis, whereas in children usually the disease occurs first in bone and breaks secondarily into the joint. These single nodules may remain quiescent in the ends of the bones for some time without giving any evidence of their presence. Hip-joint disease usually begins as a bone disease; is most commonly seen in childhood, and affects males more than females. In later life there is little difference between the sexes in this respect. It is probable that most of the cases of bone disease are secondary to some diseased bronchial or mesenteric gland. Landerer examined post-mortem 150 cases of tuberculosis of the bones and joints, and with only one or two exceptions found tuberculosis disease of the bronchial glands that evidently antedated the bone affection. There is an undoubted hereditary tendency shown in this disease; in two series of several hundred cases of tuberculosis and bone tuberculosis in about half there was found history of tuberculosis in the parents or the grandparents.

A great number of experiments have been made upon animals to demonstrate the tuberculous nature of so-called "scrofulous disease." Rabbits or guinea pigs have been injected in the peritoneal cavity or in a joint, and immediately afterwards the joint was twisted, bruised or dislocated. When the bones or joints were not subjected to trauma there was no tendency to the formation of tubercles therein. All cases of fracture healed without trace of tuberculosis at the seat of fracture. In this respect there is quite a difference between the action of the tubercle bacilli and that of the pyogenic cocci, for when the animal is injected with the latter the fracture is sure to become infected.

There are two forms of tuberculous disease of joints: in the one the disease begins in the epiphysis, in the other in the synovial membrane of the joint. In the first form there is a prodromal stage during which only the bone is affected. As the disease approaches the articular cavity, an inflammatory reaction non-tuberculous, is set up in the joint, and it may become filled with serous exudation which may last some time

and finally disappear, or the synovial membrane become infected and granular. Or the membrane may become the seat of a proliferative inflammation, and adhesions and contractions almost obliterate the joint, and still the seat of the tuberculous infection remain confined to the end of the bone. This is seen in the hip joint frequently and the joint becomes ankylosed. If tuberculous material finds its way into the joint, it is spread about by the movements of the limb, into all parts of the synovial capsule which soon becomes infected.

The infection of the joint from the bone occurs through the gradual spread of the pathological process by way of the Haversian canals, and by the absorption of the trabeculae. When the disease has not spread into the joint, all that may be necessary may be to remove this small focus in the end of the bone or the sequestrum. When the infection breaks into the joint, the infection of the synovia takes place rapidly. In some cases the synovial membrane, although the seat of miliary tubercles, may remain moist and smooth: in other cases (mostly in old adults) there may be a rapid breaking down into pus. Then there is the form with extensive granulations producing the so-called "fungous" type of joint disease. In the joints of the aged already referred to there may be extensive disorganization and the cavity becomes filled with tuberculous pus. This tuberculous hydrops is not very common.

The bone type of the disease is the commonest, and is found chiefly in children. The cartilage is readily affected by the granulation tissue working from beneath or by the action of pus in the joint, owing to its feeble resisting power. Finally ulceration of the cartilege is produced. Sometimes in the hip joint the granulations may be so exuberant, the cartilage may be lifted entirely off—caplike.

In the primary synovial form of the disease, the bone may be only slightly affected.

There is a peculiar form-caries sicca, that is dry caries, in which the synovia proliferates extensively, penetrates the cartilage, and may destroy a considerable part of the head of the bone, e. g. the humerus. It is seen between twenty and thirty, and runs its course in one or two years leaving the shoulder ankylosed.

Rice-like bodies may be found in affected joints which have retained a good deal of motion, but they may also be found in joint affections which are non-tuberculous. They are formed from the exudation of fibrin. Their presence may be recognized by a peculiar cracking sensation like that produced by compressing snow.

Changes in the soft parts connected with the joints. In the cases you have seen lately, you will remember that in two of them at least the soft parts were extensively disorganized, and were riddled with fistulae. The change I wish particularly to refer to is gelatinoid degeneration affecting the capsule and the connective tissue, as well as certain structures within the joint. Even the muscles and tendon are subject to this peculiar change. This gelatinous change is thought to be due to the venous stasis resulting from the increase of the contents of the joint capsule. But this peculiar formation so characteristic of tuberculosis of joints is found where no such obstruction exists. Therefore the change, Warren thinks, must be due to chemical change brought about by the tubercle bacilli in the surrounding tissue.

Spasmodic contraction of some of the muscles governing the joint as in the flexors of the knees, is one of the marked clinical symptoms of the disease. This contraction is caused by the reflex irritation of the nerves of the muscles affected, as was shown so well by Hilton three-quarters of a century ago. By this muscular contraction deformities of the spine, the dislocation of joints, e. g. the knee, and great deformity may be brought about. Cure may take place by absorption of the tuberculous tissue, and its replacement by healthy granulation tissue. Contraction necessarily follows.

In the bones tuberculous masses—even sequestra—may be absorbed. Cheesy masses, as stated before, may remain quiescent for years. With partial operation such a quiescent mass may be disseminated, and a military tuberculosis result.

A long bone may increase in length, or there may be atrophy in the caliber of the bone. If the epiphysis be attacked and destroyed—rather the epiphyseal cartilage—in the growing period of the body—then the bone will cease to develop in length.

Just a few words as regards the peculiarities of the individnal joints reacting to local tuberculosis:

The hip: It was stated that in the larger number of cases the disease originates in the bone, but it also originates in the membrane not in-

frequently. It may attack the acetabulum or the head of the femur, the neck or the great trochanter. The ligamentum teres may melt away and the joint cartilages become exfoliated. The contraction of the surrounding muscles causes the head of the femur and the acetabulum to be pressed together more strongly, increasing consequent ulceration. There may be an abscess confined to the joint, but usually the capsule is perforated and the abscess becomes manifest extra articularly. In the later stage of the disease one cannot say whether the joint was originally attacked by the epiphyseal form or the synovial form of the disease. The head of the bone may become completely destroyed, and the acetabulum enlarged. There may be dislocation of the head of the femur. Sometimes the amount of bone destroyed is enormous. After the disease has fully developed there is not likely to be a cure without ankylosis.

In the knee joint, in childhood, the synovial origin is as frequent as the bone form. Later in life the bone form is more common, and the frequency of sequestra in old people makes the disease more obstinate.

Tumor albus or white swelling of the knee joint is due to the formation of granulation tissue, to the gelatinous change in the periarticular tissue, and to the enlargement of the ends of the bones. There is simultaneous atrophy of the muscles about the joint. This joint affection seen so frequently is ascribed to the use of the joint in a patient not properly advised as to the treatment and care. The whiteness of the skin is due to the absence as yet of inflammation of the skin. In a well advanced case of the disease, on opening the joint there are found more pathological changes than are expected from the clinical signs and symptoms: the cartilages are well ulcerated, the synovial membrane badly infiltrated with tubercle, and periarticular abscess usually disclosed by the incision, which may or may not communicate with the joint.

Then when there is flexion of the joint from the reflex contraction of the muscles, from the pressure there is ulceration of the cartilages or of the bones and displacement of the head of the tibia, which is also favored by the relaxation of the capsule.

The shoulder joint is not very frequently the seat of the disease, which is usually found in adult life. The head of the humerus may be affected, but the greater tuberosity is most frequently affected. Caries sicca, tuberculous inflammation of the shoulder joint, has been referred to. There is atrophy of the tissues about the joint, and the condition may greatly resemble a dislocation, from the emaciation and the prominence of the bony landmarks.

Tuberculosis of the elbow joint may result spontaneously or as the result of slight injuries, especially in children. In our recent case, the patient is a man about 38 years of age.

According to Billroth's statistics of 1996 cases there were:

Elbow	93	Ankle	150
Knee joint	239	Wrist	41
Hip	198	Shoulder	28

the elbow being fourth.

The disease usually commences in the bone—the spongy portion of the olecranon. Nodules may occur in the epiphysis of the humerus, but rarely in the radius. Sometimes, the disease first appears in the synovia. Localized pain and some enlargement of the bone indicate its beginning. As a rule, the movements of the joint are impaired early. The surrounding tissues are swollen as the joint becomes disorganized. As you will recollect from the cases you have seen here (Oak Forest), there was well marked tumer albus, with the spindle shaped swelling.

The prognosis of tuberculous disease of the elbow is not favorable for re-establishment of movement unless the case is treated early. The beginning is insidious: the point of origin in the bone must be sought for early. It may remain confined to the bone for some time. There is inability to use the joint and stiffness. In the lower extremities, there will be some lameness. In a superficial joint as the elbow or the knee, there may be some swelling over the part of the bone affected and pain upon pressure. Pus may form and be discharged with particles of the bone externally. The adjacent joint may suffer from non-tuberculous inflammation with enlargement, and spindle-shaped enlargement follow. The veins are injected, and the skin thin and shiny like a bald head. The muscles over the joint atrophy, and there will be some atrophy of the tissues above and below the joint. In the later stages, the muscles may undergo degeneration, with absorption of the contractile substance.

Muscular fixation is a symptom of nearly all forms of tuberculous joint disease. The joint is

flexed, the limb adducted, with more or less rigidity. The flexion is undoubtedly due to reflex contraction of the muscles from irritation. In the hip, spasm is present early. If there is no limitation of motion there is no tuberculous disease present.

Pain is a prominent symptom of joint disease—sometimes it is wanting. In hip disease, it is a well known fact the pain is referred to the knee, and there is sensitiveness to jarring of the limb. The knee pain is due to the intimate association of the sciatic, the obturator, and the anterior crural nerves. As mentioned by Hilton, the nerves which direct the motions of the muscles moving a joint, also furnish the cutaneous sensation over the joint and the joint sensation. The night cries associated in children with early hip disease are caused by sudden sharp pain, which leaves a feeling of aching in the hip and the thigh. Also, tenderness may be elicited in the groin just external to the femoral vessels, and also on the inner surface of the head of the tibia. In the ankle joint, the anterior and lateral portions are the tenderest spots.

In the elbow joint, pain on pressure is felt over the head of the radius. Pain in Pott's disease is generally referred to the back of the head, the shoulders, the chest and the abdomen—"stomach-ache." Tenderness on pressure over the spine is not a symptom of this disease.

There is usually little if any febrile disturbance during the early stage of the disease and while it is confined to the bone or joint. Even when cold abscess is present, the rise of temperature is slight. If pulmonary tuberculosis be also present, or tuberculosis of other part, there may be fever of course.

In case of miliary tuberculosis, there may be continued and high fever. When a cold abscess breaks, there is added a pyogenic infection, and the fever becomes hectic in type.

Cure, it is said, may take place in even the most aggravated cases, but with ankylosis or deformity. However, a fair amount of motion often remains in some joints after recovery. It is not uncommon for relapses to occur several years after apparent cure, some cheesy material remaining imprisoned in the cicatricial tissue.

In unfavorable cases, albuminuria may appear as the result of amyloid degeneration of the kidneys. Pulmonary tuberculosis may appear as a complication, particularly in connection with caries of the carpus.

Affections formerly known as caries of the joints, scrofulous disease, gelatinous disease, fungous or strumous affections, spina ventosa, etc. are of course tuberculosis and nothing else.

Diagnosis: A fairly good condition of the patient does not preclude tuberculosis of the bones, the marked symptoms mentioned appearing only in the later stages.

There are a number of other infectious bone diseases which begin as acute affections later becoming chronic. Acute osteomylitis is the most frequent of these. It may lead to suppuration of the joint and destruction of the articular cartilage. It begins as a very acute inflammation of bone, with profound constitutional disturbance. When the necrosis has taken place, the abscess has broken and fistulous openings formed, the acute stage passes away, and the patient is left with chronic suppuration of the bone. In this, the inflammation affects only the shaft and not the epiphysis. Tubercular sequestra are as a rule smaller, more irregular, and are filled with cheesy material.

Sometimes, syphilis of bone is not readily distinguished from tuberculous disease. There is not the same tendency to suppuration, and the disease affects certain localities. Syphilitic caries of the cranium is usually very extensive, and runs its course without suppuration. Then the history of the case points distinctly to syphilitic disease. A gumma may form in a capsule of a joint, but the therapeutic test will clear up the diagnosis.

Metastatic inflammation of the joints may be referred to only as occurring as complications of the acute exanthemata.

Serous effusion into the knee joint, hydrops articuli, may suggest tuberculosis, as in organic disease or after slight injury as after jumping from a car, etc.

Other joint affections which I shall merely mention are neuralgic or hysterical joints, arthritis deformans.

Periosteal sarcomata may simulate tuberculous disease, and have been opened by good surgeons.

Prognosis: It is far more favorable in children than in adults. The severest type of bone and joint disease may heal spontaneously — in fact the conditions for limiting and subsequently absorbing the tuberculous foci are more favorable

in bone than in internal organs as, e. g. the lungs. The localization in bone and joint disease is more marked in children, and a minor operation frequently suffices for the cure of the disease. Caries of the wrist in adults is almost invariably followed by pulmonary tuberculosis. Warren in his Surgical Pathology says that resection for tubercular disease of the ankle in adult life is not of much avail, and that amputation is the only resource in disease of the carpus and tarsus in this age. This has been our experience.

The statistics of this disease do not show a very large percentage of cures. Billroth gives estimate of 27 per cent mortality in cases observed by him in sixteen years. Koenig 17 per cent. in 177 operations. Even after surgical removal, there is always the possibility of a local recurrence or of the affection springing up in some other organ. The difference in the prognosis in diseases of the different joints is very great. In the most favorable cases, it is unsafe to promise a cure in less than two or three years, and there is always the danger of relapse after several years of health.

Treatment: I will only refer to general treatment. The constitution treatment differs not at all from that employed in other tubercular diseases: plentiful supply of milk and fresh eggs, country air, cod liver oil in cold weather, phosphate of lime, syrup of the iodide of iron in the advanced stages. When albuminuria appears, as the result of amyloid disease of the kidneys, KI is said to be of service.

Local Treatment: Fixation of the joint should be employed in the early stage, when the tubercular disease of the bone is exciting surrounding inflammatory reaction. This may be continued for several years, with light compression. At first a thin layer of plaster of Paris with a coating of silicate of potash or dextrin, and later the latter renewed several times a year. This treatment is more applicable to the knee than any other joint. It can also be used for the hip or the ankle, the wrist, and sometimes for the elbow. In the shoulder joint it is of little use.

Another important element of treatment is extension to overcome the spasmodic action of the muscles. Extension prevents injurious pressure of one bone upon the other, the spread of the disease in the joint, and absorption of the bone, which may lead to considerable deformity. This mode of treatment can be applied only to the knee or the hip. In the hip affections, when they have passed the acute stage the extension splint may be used. I shall not dwell on these apparati, as you are doubtless quite familiar with their construction. I shall refer only to our well known ambulatory splint, and those of Sayre and others.

The malposition occurring in the knee joint must be overcome by extension or by forcible reduction. Some of the tendons in the politeal space may have to be severed to straighten the joint, then plaster applied. Bony ankylosis in an unfavorable position can be relieved only by osteotomy.

The treatment of cold abscess; preserve it from breaking as long as possible. When rupture is inevitable, make a small opening and endeavor to preserve from mixed infection. After aspiration, iodoform emulsion may be injected, then a splint used. Several injections of iodoform emulsion may be necessary. This treatment is well adapted to young people and children. It may be tried in primary epiphyseal disease as well as in synovial disease.

If the nodule can be localized, perhaps the best treatment will be to currette it, and pack the cavity. The ten per cent. iodoform emulsion may be used in open sinuses. It is not so effective as before the abscess is opened. Resection of a joint would not be resorted to where the nodule could be attacked in the epiphysis. If a sequestrum is present, it must be pried out. The cavity may be filled with iodoform gauze. When the joint has been invaded, arthrotomy may be necessary. When the joint and the epiphyseal ends of the adjacent bones are extensively disorganized and diseased, severe measures will have to be resorted to, amputation being the dernier resort—not to be delayed too long.

In short—plaster early and long continued, and especially for children—I cannot praise it too highly. In neglected tuberculosis of joints of the extremities—where the patient is chained to his bed by extreme suffering—and plaster has failed—then amputation. The change in the patient from wretchedness and despair to happiness and an active life is commendation sufficient. In almost a decade at Oak Forest we have seen not a few such. On the other hand a greater number were received in an incurable condition, either essentially so or by reason of neglect.

It is obvious the foregoing remarks apply only

to bones and joints of the extremities. I do not refer to caries of the spine, upon which volumes have been written. Suffice it to say in these affections the sovereign remedy is plaster, and then plaster again and again.

NEPHROLITHIASIS COMPLICATING PREGNANCY*

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In considering nephrolithiasis as affected by pregnancy we have two main questions to deal with; First, nephrolithiasis, complicating an existing pregnancy; secondly, whether a pylelotomy, nephrotomy, nephrectomy, or other surgical operation done for lithiasis jeopardizes the health or life of mother or fetus in the event of a subsequent pregnancy.

During pregnancy, the kidneys are abnormally taxed by the secretory load consequent to metabolic activity, and to elimination of fetal and maternal waste products, and, like the ureters, are subjected to the gradually increasing pressure of the gravid uterus.

Tridondani contends that during pregnancy venous stasis is induced in the kidney, first, by pressure of the enlarged and enlarging uterus on the renal veins; secondly, by engorgement of the abdominal vessels, and thirdly, by the fact that the uterine arteries during pregnancy draw off a large proportion of the blood from the kidneys. This venous stasis affects the nutrition of the glomeruli both by the increased amount of urea secreted and the attendant irritation and predisposes to albuminuria and other kidney complications of pregnancy.

During pregnancy, the skin is less active than normally; it excretes less. The pregnant woman's physical condition is one of decreased resistance. Such direct factors as the aforementioned and others acting indirectly, as sluggishness of the bowels and consequent constipation, not uncommonly observed during pregnancy, can easily impair normal kidney efficiency and can and may provoke renal disturbances even in the absence of pre-existing or predisposing renal lesions. Therefore, it is conceivable that a kidney, the seat of disease, may be further impaired, functionally and anatomically, during and by the pregnant state.

Renal lithiasis associated with, or complicating pregnancy has not received adequate study. Not infrequently, it escapes detection; not uncommonly, it is misdiagnosed and therefore injudiciously treated. It is observed in pregnancies normal or abnormal in type, location and evolution; it may be one of two or more pathological states coexisting with, and influencing or not, the evolution of an otherwise normal gestation. Our conclusions are based on a somewhat exhaustive analysis of cases reported in the literature and on our own personal clinical experience.

If only one kidney be affected, the organism may and usually does accommodate itself with the sound kidney; but during pregnancy, the sound kidney alone may fail to adequately eliminate the combined waste products of mother and fetus; signs of toxemia may appear. It must then be decided upon the conditions presented by each individual case whether a woman with a known kidney lesion is to be allowed to undergo the risks of pregnancy with the added strain which it throws on the kidneys. If a renal calculus or calculi are present, the medical attendant must determine whether its concomitance with the progress of pregnancy is permissible in the interests of mother and child; and should these interests demand it, what operative measure is called for. On one hand, there is the certainty of increased work for the kidneys, with a possibility of their failure to accomplish it; on the other hand, while the risks arising from operation may to a large extent be eliminated, and are, in a sense, minimal, yet operation offers no positive guarantee that urinary secretion will be increased. Pregnancy demands efficient kidney functioning. If renal lithiasis be present and operative relief is clearly indicated, we must know how operative intervention will affect the existing pregnancy, and whether it will in any way incapacitate the woman in the event of a subsequent pregnancy or pregnancies.

Renal calculi, associated with or complicating pregnancy, are unilateral or bilateral, single, double or multiple and (like calculi in the non-pregnant) vary in location, shape, size, mobility, chemical composition and other characteristics. Their formation either antedates, is simultaneous

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with, or consecutive to, the first or any succeeding pregnancy of the patient at hand.

The calculi excepted, the calculous kidney may show but slight structural deviation from the normal; or it may be anomalous in type, (single kidney), (fused kidney), b. location (ectopic kidney), or c. structure (polycystic kidney, hydronephrosis, yponephrosis). The anatomical anomalies presented by a calculous kidney are congenital, acquired, or both. If acquired, they are either of independent origin, or determined by the presence of calculi. Renal calculi, sooner or later, provoke structural kidney changes, degenerative, inflammatory, hyperplastic or neoplastic, in nature.

Nephrolithiasis, occurring in pregnant women, determines the same anatomical changes in the affected kidney as are found in the calculous kidney of the non-pregnant. These structural changes, the resultant of irritation, obstruction, and infection, manifest themselves by exudative, proliferating and degenerative processes, often suppurative in character; rarely, neoplastic.

Under the influence of stones, the epithelium of the renal tubules may necrose, form cysts or become malignant. In the absence of infection, the lesions presented are those of atrophic and diffuse nephritis. Generally, the aseptic stage of calculus is brief. Infection, sooner or later, supervenes and gives rise to one or more of the following conditions: Pyelonephritis with or without abscess formation, perinephritis, sclerotic or suppurative pyonephrosis, and partial or complete conversion of the kidney into a sclerolipomatous mass.

In nephrolithiasis, early diagnosis leads to the institution of logical treatment before irreparable kidney changes have taken place. An accurate diagnosis presupposes an intelligent interpretation of the subjective symptoms, of the bacterial, chemical and microscopical urinary findings, of the x-ray data and also the combined use of the cystoscope and the x-ray as employed in pylography.

In every case, there should be a complete roentgenographic exposure of the urinary bladder, of both kidneys and of both ureters. The skiagram is a permanent record. Skiagraphy shows (a) whether calculi are present in one or both kidneys; (b) the number, size and shape of the calculi; (c) their location—pelvis, calyx, parenchyma, or pyo—or hydronephrotic cavities; (d) the presence of extra-renal calcareous deposits.

Pyelography, a most valuable diagnostic procedure, should only be employed when the dangers attending its use are far out-weighed by the information which it offers. It enables us to determine the presence or absence of pathologic changes in the reno-pelvic outline and whether a doubtful shadow is or is not extra-renal.

Pain, local and radiating, is the most important subjective symptom. Its character and intensity are influenced by many factors: size, nature and mobility of the calculus or calculi, degree and acuity of infection, etc. It is provoked and aggravated by walking, fatigue or exercise, and subsides with rest. Hematuria, intermittent or continuous, scant or profuse, and pyuria are also important symptoms.

In cases of persistent lumbar pain, a radiograph of the kidneys, ureters and urinary bladder is of great service to the clinician. Radiography of the urinary system has limitations, determined, to a large extent by:

a. Defective technique;

b. Defective interpretation of shadows seen in the negative;

c. Impossibility of obtaining a satisfactory negative;

d. Defects in negatives;

e. Caseous kidneys;

f. Calcified mesenteric glands;

g. Phleboliths;

h. Bony deposits in the pelvic ligaments.

If the symptoms be mild, obscure, indefinite and identification of the x-ray shadows uncertain, the medical treatment of renal lithiasis is to be instituted and the pregnancy is permitted to proceed undisturbed. After puerperium, or better after the period of lactation, operative treatment is to be urged in suitable cases.

As many renal stones are spontaneously expelled, a patient should be kept under observation for a limited period of time and nature given full opportunity to remove the stone or stones without recourse to surgical intervention. Operations for renal stones give such good immediate and remote results, that treatment with supposed solvents finds few advocates. While it should be the general rule not to subject pregnant women to the shock of major operations, one must not overlook the fact that during gesta-

tion the prognosis of kidney operations is largely subordinate to the state of the affected or unaffected kidneys. The tolerance of even advanced pregnancy to major operations is well known, and it will be shown that if the necessity for such an operation exists, pregnancy in itself, within certain limits, is not a contra-indication. Operations for nephrolithiasis do not unfavorably influence the progress of pregnancy or in any way disturb delivery or the puerperium. This is all the greater reason why operative relief should be sought when other means fail to bring about the desired result in regard to kidney efficiency, removal of toxemia and cure of the latter's source. Operative relief being indicated, it is necessary to determine as accurately as possible the functional value of the kidneys.

In the absence of contra-indications, operation can be performed with safety up to the sixth month of pregnancy, to both mother and child. Up to that time in the absence of contra-indications, operative treatment is to be instituted in cases:

(a) of renal calculi too large to be spontaneously expelled through the natural channels. Even if the symptoms be recent in origin, or slight in intensity, nothing is gained by delay. Be not too optimistic as to small renal calculi; of all calculi, they are the ones most apt to lodge and become impacted in the ureter.

(b) of multiple calculi, irrespective of site, size, or number.

(c) of recurring attacks of excessive pain localized to, or radiating from, the renal region.

(d) of profuse or continuous hematuria.

(e) of acute pyelonephritis, of cortical or pericortical pus formation and pus collection, and bilateral pyelonephritis.

(f) of a calculus giving rise to urinary retention within the renal pelvis. Such retention, always a menace to kidney integrity, may lead to hydronephrosis, pyonephrosis, etc. A stone in the cortex of the kidney does not furnish as urgent an indication for operation as one in the renal pelvis.

(g) of Obstructive calculous anuria. This condition calls for immediate relief.

(h) of bilateral nephrolithiasis. In bilateral cases, first operate on the least involved kidney provided there is no acute pathological process in the other kidney, requiring immediate attention. In from two to three weeks, operate on the other kidney. If one of the kidneys be the seat of acute complications, it should be the first to receive surgical relief.

(i) of stone in one kidney and disease in the other.

(j) of renal lithiasis co-existing with tubercular or neoplastic disease of the same kidney.

(k) of a calculus or calculi in a patient's only kidney. Here, the patient's existence depends on the unhampered function of his remaining or sole kidney.

Nephrolithiasis and its complications are subjected for cure to the following operations, each of which has its respective indications, limitations and increasing field of usefulness: pelviolithotomy, nephrolithotomy, nephrectomy, nephrostomy, incision and evacuation of perinephric phlegmons. It may be necessary to supplement any of the fore-mentioned operations with temporary drainage of the renal pelvis, renal parenchyma, or perirenal regions.

Pelviotomy or pelvio-lithotomy, the operation of election, the operation most generally used for nephrolithiasis, is well adapted to the removal of stones present in the renal pelvis. With it, dangerous hemorrhage, immediate, consecutive or secondary, is of rare occurrence. Pelviotomy does not injure the renal parenchyma. It is unsuited for removal of voluminous or branched calculi. The pelvis is to be incised on its posterior avascular aspect.

Nephrotomy or nephrolithotomy, is attended with destruction of kidney tissue; at times, is followed by secondary hemorrhage. The friability of the kidney tissue may be such that the stitches tear out. Nephrotomy permits a thorough exploration of the organ and a complete removal of the calculi. It possesses the signal advantage of not entailing the sacrifice of the kidney. It is employed also if the calculus or calculi lie just beneath the renal surface, if the renal pelvis be abnormally small or if the kidney be so bound by adhesions that its exteriorization is inadvisable or impracticable. If pyelotomy be out of the question, nephrotomy is the operation of election for nephrolithiasis. Usually all the calculi can be removed through a large incision; in special cases, several small incisions may be made. If infection exists, pass a drain through the cut

cortex to the renal pelvis, also pass a drain to the kidney.

Nephrectomy: Hartmann's study of the literature leads him to conclude that the removal of a diseased kidney does not exert any unfavorable influence on the development of future pregnancies, and that this operation does not expose the patient to interruption of pregnancy, any more than other major abdominal operations.

Nechrectomy is indicated:

(a) In multiple, parenchymatous, large coral-shaped calculi unsuited to pyelotomy or nephrotomy.

(b) In renal hemorrhage that cannot be otherwise checked.

(c) In cases presenting advanced necrotic, suppurative or destructive renal changes. It is questionable whether it is worth while to save an organ having scant functional value and showing marked anatomical changes when a complete recovery can be obtained by a comparatively safe operation. If there be doubt as to the functional integrity of the other kidney, nephrectomy is not to be performed.

(d) When the kidney is reduced to a mere shell.

(e) When the kidney has been transformed into a sclero-lipomatous mass.

(f) If it seems probable that nephrolithotomy will leave a permanent urinary fistula.

(g) In chronic fistulae of the kidney, pelvis or ureter which have not yielded to non-operative treatment.

(h) In malignant disease such as tuberculosis, cancer, etc., in a stone bearing kidney.

Nephrolithiasis in pregnant women calls for the same operative procedure as in the non-pregnant. In the pregnant, these operative procedures have the same indications, limitations, palliative and curative efficacy as in the non-pregnant.

In discussing the condition, Legueu thinks that in the absence of complications, pregnant women should not be operated on for kidney lesions during pregnancy. Marion thinks that women showing kidney calculosis during pregnancy can be classified into two groups: First, those in which the calculus causes complications and which everyone is agreed should be operated on; secondly, those in which there is an absence of symptoms. In this second category, Marion distinguishes those at the beginning of pregnancy and for whom there is every advantage of preventing infectious complications; these can be operated on without risk. In cases in which the pregnancy has passed the sixth month, events should take their course.

Pregnancy in nephrectomized women occurs far more frequently than is reported in the literature, as the number of nephrectomies done on women within the age limits of sexual activity is considerable. Pregnancy, if not occurring too soon after a pyelotomy, nephrotomy or nephrectomy, is not hazardous, providing the remaining kidney is not diseased. If the remaining kidney is diseased, and not functioning properly, childbearing is dangerous to mother and child and is not to be recommended.

SPECIFIC HYPERSENSITIVENESS AS A COMMON CAUSE OF ILLNESS*

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A rather large proportion of individuals inherit a constitution sensitive to one or more alien substances. After becoming sensitive they react in characteristic ways whenever they come into intimate contact with the substance to which they are sensitive. Naturally acquired sensitiveness in humans is usually far more marked in degree than that found in animals which have been sensitized artificially by treatment with alien proteins. With animals which have been sensitized to horse serum, for example, it takes an appreciable amount of horse serum given subcutaneously or intravenously to cause death or even a severe reaction. When a human becomes sensitive, however, to some alien substance, such as horse danger, his sensitiveness may be so marked that he becomes violently ill if exposed to the infinitesimal quantity of dander in the air around horses. Individuals sensitive to pollen have hay-fever and asthma after contact with the minute quantity of pollen in the air at certain seasons. They may have severe or even dangerous reactions following the subcutaneous injection of as small an amount as 0.1mgm. of the pollen to which they are sensitive: Sensitiveness of this extreme grade is not produced in animals by treatment with alien serums.

Substances to which individuals are sensitive

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may gain entry into the body by several routes and cause illness. It may be through air-carried bodies coming into contact with the mucous membrane of the eyes, nose, pharynx, larynx, bronchial mucous membrane, and less often the skin. This may cause a local reaction at the site of contact, or much less often, a reaction in some remote tissue after absorption. Contact may occasionally be more direct than that mentioned above. It may be contact between solutions and the skin or between food and the gastric mucous membrane. This may cause trouble locally, or frequently in distant tissues after absorption, or both. Foreign materials may be carried by the blood or lymph to distant parts after reaching the submucous or subcutaneous tissues by absorption or through the action of infection, or from insect bites, or by hypodermatic injections.

Some substances have a greater faculty for sensitizing than others. For instance, polen sensitizes more frequently than do other parts of a plant. Furthermore, some pollens as ragweed pollen, sensitize much more frequently than do others as golden rod pollen. The proteids of egg sensitize more frequently than do the proteids of beef. The future of the interesting subject in the diagnosis and cure of disease, lies in the discovery and listing of the great number of bodies which tend to sensitize, and in the practical knowledge of the whereabouts of such bodies.

In the subsequent paragraphs are summarized impressions and conclusions gained by an experience with this subject during a period of six years. Our experience has been a little different perhaps from that of physicians who specialize in the line of work. We believe this is because relatively few of our cases (except pollen cases) have been referred because of allergic symptoms. The great majority have been picked out of a group of obscure cases observed in a consulting medical practice and many were discovered largely through the rather free use of intracutaneous tests. As a result, we believe we have encountered more of the milder cases and fewer of the severe cases than writers who have specialized on the subject. Also, we believe our percentage of the less common manifestations, such as the gastric and bladder cases, has reached higher totals, than have those of physicians who have drawn cases which have been previously diagnosed. In these, I am sure that the proportion of nasal, bronchial, and cutaneous cases run higher.

POLLEN

Pollen is far the most common cause of allergy in this geographical district. The more important pollens are those of the common abundant weeds. It goes without saying that pollen of uncommon plants are not important for the simple reason that the average individual does not come into contact with them frequently. On this account, the pollen of cultivated plants is of interest only in instances where the habits or occupation of an individual brings him into contact with them frequently. Also light air-carried pollen, as ragweed pollen, is more important than insect carried pollen (daisy, dandelion, golden rod, and other flowers). This is not only because the former are more abundantly produced but also because they are carried by the air for considerable distances from their sources of origin. Furthermore, pollen of plants which pollinate for a short season only, such as some trees, is far less important than the pollen of weeds, as ragweed, which pollinates for weeks or months, and for this reason gives rise to a long and arduous season. For these reasons, therefore, the plants which pollinate over a long season, grow abundantly and produce large quantities of air-carried pollens, are the important factors in the causation of pollen allergy in humans.

Specificity of Pollens. Pollens are very specific in their action, or better expressed, an individual sensitive to pollen often is sensitive to one variety only, in fact, often to a certain pollen growing in a limited district. Some individuals are sensitive to one pollen only. The majority are sensitive to more than one. It is usual to find pollen patients who are sensitive also to other derivatives of plant life, such as orris root or to vegetable proteins, grains, or to emanations from animal hair.

Flowers, Leaves, Roots, Stems, Wood. Flowers, leaves, wood and roots are not common sources of allergy in this district. We have encountered only a few. Worthy of especial mention is the case of a physician of our acquaintance who invariably has nasal and bronchial allergy and swelling of the eyelids within ten minutes if he puts on any variety of panama hat. This experiment he has tried many times. He is sensi-

tive to no other straw and to no other type of hat.

It is quite common to find individuals sensitive to orris root and since this product is used widely in the manufacture of perfumes and toilet articles, such as tooth paste, face powder, sachet, soap, etc., it is worthy of emphasis. One should also mention, in addition to the products derived from plant life, those derived from coal and oil which are used so commonly in perfumes, flavoring extracts, as solvents, drugs, etc., and which are encountered almost daily by a great number of individuals. These should be taken into account in the study of obscure cases.

As examples of hypersensitiveness to products of the above type, may be mentioned benzol, a by-product obtained in the manufacture of coke, and used commonly as a substitute for gasoline and in the arts. We have observed a patient so sensitive to benzol that not only was she made ill when exposed to its fumes, but when a drop of benzol was applied to a scarified area on the skin a wheal developed immediately, finally reaching a length of 20 cm. Many other patients whom we have tested similarly with benzol have given no reaction whatever. We have likewise observed a patient sensitive to the vapors of gasoline; one sensitive to turpentine, who became violently ill after the painting of her house; several sensitive to some constituent of certain perfumes (not orris root) and to face powder. Scratch tests with these gave immediate reactions. We have observed a considerable number of patients who sneeze and notice swelling of the turbinates after inhalation tests made with one or several of the essential oils used commonly in the manufacture of perfumes, but who failed to give positive cutaneous tests. Goodale has mentioned the fact that patients with pollen allergy often sneeze or have asthma after the inhalation of the odor of scented flowers. A distinction must be made between these and patients who are actually specifically sensitive to some constituent of the plant other than pollen.

Drugs. Drug idiosyncrasies have been observed and discussed since the early days of medical science. Cooke has drawn attention to the similarity of their manifestations and those of allergy due to other causes. It is not uncommon to observe patients who are made ill by ordinary doses of cocaine, quinine, and other alkaloids, the bromides, iodides, aspirin and other coal tar products, belladonna, arsphenamine and numerous other drugs which to normal individuals have no marked untoward effect. Many remedies called heart depressants have gained their reputations for no reason other than that they tend to sensitize and cause phenomena of allergy. Each of several patients observed by the writer who were made ill by aspirin were hypersensitive to it and had symptoms resembling those of allergy caused by other agents. The illness in each case was caused by a small dose. The average patient can tolerate very large doses. It is interesting to mention in this connection apophysin and novocaine, as a relatively common cause of chronic eczema of the hands and face in dentists. Striking cutaneous reactions can often be obtained in the drug allergies.

Animal Hair and Feathers. Emanations from the skin and fur of animals have been less frequent causes of allergy in our experience than pollen and the foods. This type of sensitiveness when it exists, however, is equal in severity to that caused by pollen. This source of allergy would not be extremely important were it not for the fact exposure of some individuals even to the fur of animals used in wearing apparel, carpets, curtains, and in the upholstery of furniture causes disagreeable symptoms.

House Dust. This interesting source of allergy has been suggested recently by Cooke. He was able to obtain typical wheals by the intracutaneous use of extracts of house dust which he could not identify with other allergens. Positive reactions to dust extracts has been traced in one of our cases to a rug and in another apparently to wood smoke.

Smoke. The majority of patients with nasal or bronchial allergy are made worse by the nonspecific irritating effects of smoke or vapors. Some complain specifically of coal smoke, gasoline smoke, or tobacco smoke. We have observed several patients who seemed specifically hypersensitive to certain types of smoke and not to others.

Foods. Food is a very important source of allergy. It has ranked second only to the pollens in our experience. An individual may be sensitive to one article of food or to several articles of food; often to a group of somewhat similar foods such as grain or sea foods. An individual may be sensitive not only to one article of food,

such as egg or milk, and to one food only, but may be sensitive to one particular constituent of a food, such as lactalbumen; in fact, in the case of milk, he may be sensitive to and made ill by some article of food eaten by the animal furnishing the milk. This latter very interesting fact has been brought to light especially by pediatricians in tracing out the source of eczema in infants. Frequently an infant is found sensitive to some article which it has never eaten, but which is a constituent of the mother's diet.

Sensitiveness to foods is rarely so marked as is sensitiveness to pollen, although one occasionally encounters patients made violently ill by the merest traces. Delayed reactions are more frequently observed in food cases than in pollen cases.

Bacterial. Patients with infectious diseases, as acute tonsillitis or acute articular rheumatism, occasionally have hives and other symptoms of allergy. The part played by bacterial proteins in the etiology of allergy has been especially urged by Walker.

In patients who have asthma following "colds," it is important to discover whether the illness is an actual rhinitis or whether it is in reality an attack of nasal allergy due to a reaction against pollen or some other nonbacterial substance. For example, a mother gave us the history of her child who had frequent colds each winter followed by long sieges with asthma. One could have judged from the history that the nasal infection was the primary cause of the child's asthma. Cutaneous tests proved him very sensitive to egg, however, and after egg was eliminated from the diet he had a number of "colds" but they lasted a few days only and were never accompanied by or followed by asthma.

Intracutaneous tests made with protein of Staphylococcus aureus and albus, and B. coli very commonly give cutaneous reactions which are very different from the controls. They more often resemble the inflammatory reactions given locally by vaccines than the wheals which appear immediately after the use of pollen extracts.

Insects. It is not uncommon for patients and friends to remark that they are made ill by the bites of certain insects. Dr. Canby Robinson mentioned the case of a patient who had a large area of angioneurotic edema as a result of a hornet's sting. An associate of mine, following an insect bite (probably mosquito) had not only generalized urticaria and angioneurotic edema, but also an attack of intestinal colic, which rendered him very ill for twenty-four hours. He had had milder attacks on numerous occasions following mosquito bites. This source of allergy is very real and is not extremely rare.

Hypodermatic Injections. Hypodermatic injections of vaccine, thereapeutic sera, pollen extract, salvarsan. and other drugs frequently give rise to phenomena of allergy which may be very severe; in fact, in rare instances even fatal. Before administering horse serum therapeutically, one should always inquire for a history of hay-fever, asthma and urticaria and if possibly, make an intracutaneous test with 0.01 cc. or less or horse serum. Individuals sensitive to horse dander are not necessarily sensitive to horse serum. In those sensitive to horse serum the therapeutic use of horse serum is very dangerous and should be avoided.

Light. We have recently observed a patient specifically hyper-sensitive to light—in fact, to the blue rays of light. Exposure of the skin of this patient for two and one-half minutes to either white light or blue light gives rise to a wheal which covers the entire area exposed. Exposure of a large area has given rise to chills and general constitutional symptoms. Evidently some product is formed under the influence of light in the patient which is extremely toxic to her and gives rise to manifestations resembling allergy.

Blood Transfusion. We have observed severe allergic reactions in two patients at the beginning of a blood transfusion which were not due to faulty grouping. The patient, in each instance, was found sensitive to a food which had been eaten by the donor. The reactions were typical of allergy, were relieved by adrenalin, and were analagous, it is believed, to the reactions in infants attributable to sensitiveness to some article of the mother's diet.

Contributory Factors. While hypersensitiveness to alien matter is primarily responsible for symptoms of allergy, other factors may play contributory roles and determine the severity and location of the symptoms. Some of these factors are the mechanical, chemical, odorific, and thermal mentioned by Walker in relation to hay-fever and asthma. To these may be added reflexes, functional activity and other factors. The

influence of these factors is noticed by the majority of sensitive patients. For example, urticaria in a sensitive individual may be brought out by rubbing the skin, or by pressure on the skin, or by sweating. The rubbing of the eyelid may bring out a large area of angioneurotic edema. The hypodermatic injection of some harmless substance may give rise to a large edematous area and subcutaneous hemorrhage. I have known a mercury injunction to cause the appearance of swelling and hemorrhage into the skin, which we feared would become gangrenous.

Patients, who have dyspepsia and abdominal pain as a result of alimentary allergy, are almost invariably made worse by the eating of rough foods, such as nuts or lettuce; by the ingestion of irritating foods such as pepper and mustard; and by the ingestion of stimulating foods, such as alcohol, coffee or salt.

Pollen asthma is usually aggravated by the inhalation of dust or irritating vapors, by the odors of flowers, the essential oils or perfumes, by changes in temperature, changes in barometric pressure, and by the quantity of moisture in the air. Asthma may be either relieved or made worse by a reflex caused by the eating of a meal or by vomiting or by evacuation of the bowels. Asthma is almost invariably made worse by physicial exertion.

The above contributory factors are mentioned and emphasized because they often deceive both patient and physician. Each may be inclined to blame secondary factors for the discomfort rather than the primary fundamental cause, e. g., hypersensitiveness. For example, patients with pollen asthma will almost invariably blame wind, dust, smoke, vapors, exposure to cold, or changes in barometric pressure for their discomfort, even though they realize that wind, dust, and changes in barometric pressure may have no perceptible ill effect upon them except during the pollen season.

Under contributory causes of allergy should be mentioned infections and functional or organic diseases. Patients often state that their illness started soon after an infectious disease or an operation, especially intra-nasal operations.

Alimentary allergy is more common in individuals who have definite pathology in the alimentary tract or its appendages (such as ulcer, gall stones, or chronic appendicitis) than it is in normal individuals. This phase of the subject has been discussed more fully in a previous paper.

Bronchial allergy due to sensitiveness to milk or pollen may be brought out or made worse by acute bronchitis or rhinitis. Nasal sinusitis and polyps often play a contributory role in the etiology of asthma and nasal allergy. Patients with nasal polyps and asthma of undetermined origin are most difficult to cure and often baffle specialists in every line. The importance of nasal defects in the etiology of asthma has been greatly over-estimated in some cases, and many patients have been made much worse by radical work in the nose designed to relieve this condition.

SYMPTOMS

Symptoms of allergy are numerous; in fact, the more one studies the condition the more he is inclined to believe that reactions may involve almost any tissue or organ and cause disorder.

The more common symptoms are those which involve the mucous surfaces, which are exposed most frequently to the action of foreign substances which tend to sensitize, namely, the mucous membrane of the respiratory tract. Symptoms involving the skin, subcutaneous tissues and the internal organs are less common, and are usually part of a general reaction resulting from absorption of an offending allergin.

Symptoms involving superficial mucous surfaces, may occur as a result of the local effect of an allergin, or as part of a general reaction. For example, asthma may be the result of the inhalation of pollen or may be the result of a subcutaneous injection of pollen extract. Dermatitis on the hands and face may be a result of the local action of an allergin on the skin of the hands and face, or as we have observed once, as a direct result of pollen injections in the treatment of hay-fever.

Symptoms occurring as a result of a general reaction are often multiple. For example, asthma occurring as a result of a general reaction from the eating of egg, is more frequently accompanied by other manifestations such as gastro-intestinal disturbance, urticaria, etc., than is asthma caused by the inhalation of pollen (local reaction).

The symptoms to be mentioned subsequently, are those which are more commonly observed in

patients having reactions. All may occur as a local or as part of a general reaction.

Ocular Symptoms. Edema of the conjunctiva, puffiness, itching, swelling and redness of the lids. Excessive lacrimal secretions.

Nasal Symptoms. Sneezing. Pallor and swelling of the mucous membrane of the nose, associated usually with excessive watery or clear mucous secretion.

Pharyngeal Symptoms. Itching of the soft palate, pharynx; spasmodic cough; rarely, slight edema of the uvula.

Bronchial Symptoms. Bronchial obstruction associated with inspiratory and expiratory wheezing (the latter more pronounced) and often associated with the expectoration of thick, mucoid sputum, rich in eosinophiles. In less marked cases, cough and shortness of breath on exertion may be the only marked bronchial symptom.

Cutaneous Symptoms. The more conspicuous are urticaria, angioneurotic edema, eczema, erythema and pruritis, which may be either local or general. The dermatitis is often associated with marked swelling and redness of the skin, cracking of the skin (especially on the hands) profuse greasy secretion, and desquamation of the superficial epithelium. It may be most severe, and when the face is involved, may almost obliterate the features and transform it into a swollen, red, greasy, weeping, unsightly surface.

Gastro-Intestinal Symptoms. Abdominal pain, either steady or griping, local or general, mild or very severe, is the most interesting abdominal symptom. It is often related to the taking of food, and quite frequently appears a few moments after the ingestion of certain particular foods to which an individual is sensitive. Honey has been the most common single cause of acute abdominal pain of allergic origin in our experience. We have observed no less than six cases and believe it to be analogous in every sense to hay-fever except that the stomach is involved instead of the nasal mucous membrane. The cutaneous reactions in honey cases are very striking. Other alimentary symptoms are abdominal discomfort, sour stomach, nausea, vomiting, bloating, diarrhea, and mucous stools. Gastro-intestinal upset occurring as a result of allergy may easily be mistaken for "ptomaine poisoning" or a surgical lesion. The local signs of peritonitis, fever, and leucocytosis, fail, however. It occcasionally, however, terminates in an acute inflammatory process in the gastro-intestinal tract, or its appendages. We have observed four cases of acute appendicitis, which required surgery, to follow a severe attack of alimentary allergy.

Neurological Symptoms. Asthenia and a sensation described by the patient as nervousness, is rather frequently observed in patients who have hay-fever, asthma, and other symptoms of allergy. Weakness may be so marked as to confine a patient to the house or even to bed; in fact, I have never observed a patient more profoundly asthenic than the sensitive patient mentioned previously who had been given a dose of horse serum. Patients with hay-fever occasionally complain as much of weakness as of their respiratory distress.

Headache. May occur as a primary symptom of reaction or may be a sinus headache caused by obstruction of the outlet of some of the sinuses, by the swollen nasal membranes. Headache may be most severe and often yields quickly to adrenalin in proper dosage.

Arthritis. Joint pain and swelling is a very definite and interesting manifestation of allergy. My friend, Dr. R. C. Lowdermilk, related to me the case of a patient who, following a therapeutic injection of pollen, developed a typical rheumatic joint, for the first time in her life; it lasted several hours during her reaction, and then disappeared completely. The development of joint pain and swelling, as part of a general reaction to therapeutic sera, is not very uncommon. There is some similarity between the joint symptoms of acute migratory polyarthritis and that of a reaction of allergy. For example, pain and swelling about a joint may migrate from joint to joint within a period of a few hours, or in fact, at times, almost within a period of minutes. It is impossible that symptoms due directly and entirely to local infection, could appear or disappear at such a rate. While there is no doubt that acute migratory polyarthritis is an acute infectious disease, it is not impossible that some of the local symptoms such as pain and swelling may be in part the result of an allergic reaction about the joint; in fact, we have greatly relieved several cases of acute migratory polyarthritis by the use of adrenalin and believe it is frequently a useful aid in the treatment of this disease. We have used adrenalin in chronic hypertrophic,

atrophic, and gonococcal arthritis with less or no beneficial effect.

Blood Pressure is usually reduced (90 to 110 mm. of mercury).

Bladder Symptoms. Frequent painful micturition may occur as part of a general reaction. This is discussed in another communication. This type of reaction may be very severe and occurs especially in patients sensitive to vegetables or grains.

Secondary Symptoms. Localized allergy may give rise to secondary symptoms which are often quite interesting. For example, a patient observed by the writer complained of a seasonal headache, which was so severe as to practically incapacitate him for work. It would come on invariably each August and would disappear soon after frost. He was free from headache during one entire year which he spent in Florida. Upon examination, nothing of interest was found except a slight pale swelling of the mucous membrane of the nose with a very small amount of watery secretion. Adrenalin was used locally in the nose with almost immediate relief. Adrenalin used subcutaneously likewise gave relief. Intracutaneous tests with several fall pollens gave typical wheals with pseudopods, also a marked attack of nasal allergy as part of a general reaction. This patient was relived completely when he was treated as a pollen case. The swollen membranes in the nose probably obstructed the outlet of some of the sinuses and gave rise in this way to headache.

Other secondary symptoms of interest are those caused by the swelling of the mucous membranes in the respiratory tract which may cause an embarrassment of respiration, which in severe cases almost borders on suffocation. Edema of the mucous membrane of the alimentary tract may give rise to symptoms simulating those of intestinal obstruction. This occurred in a patient sensitive to turpentine after the painting of her house.

It is also not difficult to understand how swelling and blanching in the mucous membrane of so delicate a structure as the appendix, could easily lead to obstruction of its lumen, irritation, and finally to an actual inflammatory process. This appeared to be the exciting cause of an acute appendicitis in four of our patients. Chronic allergy may cause eventually, debility and emaciation of such a grade as to overshadow symptoms of the primary disorder, and lead to an error in diagnosis.

DIAGNOSIS

It hardly comes within the scope of this paper to discuss in detail the diagnosis of allergy. For this the reader is referred to the many excellent articles already written on this subject.

Allergy may be suspected in any patient suffering from one or more of the symptoms previously mentioned, especially if there is a history of hayfever, asthma, chronic urticaria, or eczema in one or both parents, and especially if the onset, or relief of symptoms bears some relationship to season, geographical situation, environment such as a house, workshop, stable, city, or farm, to time of day, habits, the eating of certain foods, to wearing apparel, odors, animals or pets, etc. Very often, important points can be gained through a careful history which makes it relatively easy to trace out the source of the condition.

The use of dermal, intradermal, and ophthalmic tests are always useful and are often indispensable in the diagnosis. Results obtained in this way, however, should be controlled and verified when possible by clinical tests—that is, tests made by the inhalation, ingestion, or avoidance of the suspected substances before final conclusions are drawn.

TREATMENT

It is hardly possible in this paper to discuss the treatment of hypersensitiveness in detail. This problem may be approached in four ways —first, removal of cause; second, specific protein treatment; third, nonspecific protein treatment; and fourth, symptomatic treatment.

When a patient is sensitive to some substance which he does not encounter frequently, removal of the cause may be simple. In the case of pollens, however, which fill the air at certain seasons, removal of the cause can only be accomplished through change in geographical situation. In this case and in the case of sensitiveness to common articles of food, such as milk, eggs, or wheat, which are used so much in cooking, specific protein treatment may be advisable.

In specific protein treatment the offending allergin is given subcutaneously in infinitesimal doses to start with. The dose is increased as rapidly as the patient's tolerance will permit and is continued until the patient gains enough

tolerance to stand the amount with which his habits and environment bring him into contact. In a large majority of cases, tolerance can be increased to a point of partial or complete relief when contact with the allergin to which an individual is sensitive is not overwhelmingly great.

If one is unsuccessful in finding the allergin responsible for an illness symptoms can often be relieved temporarily by the use of non-specific protein therapy. This is not recommended if one can find the allergin to which the patient is sensitive.

As a temporary expedient, the use of adrenalin can be recommended and if given in sufficient doses should relieve almost every case. Tolerance for adrenalin varies so greatly in different patients that it is impossible to surmise the suitable dose for any individual. For this reason it is advisable to start with 0.5 cc. or less subcutaneously or intramuscularly given slowly. Doses of 0.25 to 0.5 cc. can be repeated at five- or ten-minute intervals until the patient is either relieved or until the symptoms produced by adrenalin are more disagreeable than those of his allergy. The adrenalin can be repeated every three to twenty-four hours, depending upon the time of recurrence of symptoms. It can be continued until a more practical and more permanent method of treatment can be instituted.

SUMMARY AND CONCLUSIONS

A certain rather large per cent. of individuals inherit a constitution which makes it possible for them to become readily hypersensitive to foreign matter. Once sensitive, an individual may have severe symptoms of reaction whenever he comes into intimate contact with the substances to which he is sensitive. Patients are frequently specifically hypersensitive to certain varieties of pollen, less frequently to substances which can be extracted from the stems, flowers, roots, leaves or woody matter of plants, also to products obtained in the distillation of coal, wood and crude oil, also to emanations from animal hair or feathers, to drugs, dust, smoke, foods, products of infections, insects, etc.

As contributory causes which makes the symptoms more severe are nonspecific irritants of any sort, functional activity, reflexes, infectious, functional, or organic diseases. The immediate effect of a contributary cause often deceives the patient and leads him to blame it for his illness rather than the primary cause, specific hypersensitiveness.

The more common symptoms are the ocular, nasal, pharyngeal, bronchial, cutaneous, and reduced blood pressure, less often gastro-intestinal symptoms, neurological symptoms, joints symptoms, bladder symptoms, and other obscure symptoms.

The diagnosis can be made in a majority of cases through information gained by history, physical examination, cutaneous tests, ophthalmic tests, and clinical tests.

The condition can be relieved in a large per cent. of patients by avoidance of the substances to which they may be sensitive. When this is impossible or impractical, specific protein treatment is justifiable. Adrenalin is useful for temporary relief.

NOTES ON THE TREATMENT OF COMPOUND FRACTURES OF THE EXTREMITIES

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In these notes no attention is to be given to individual fractures nor are these remarks to be applied to fractures of the small bones of the hand and foot. The method here to be described is the one in use on the Halstead service at the St. Luke's Hospital, and is the one that has given the best results. Until after returning from army service the ordinary method was used, namely, cleaning out the wound as well as possible, attempted sterilization with iodine, removing any foreign bodies present, smoothing off the ends of the bones, and reducing and immobilizing by splints or cast. From that time on the expectant treatment was used.

Experience in the army, however, with Dakin's solution and the Carrel technique, has led us to adopt the following method. As soon as the patient is brought into the hospital a thorough cleansing of the wound, inside and out, is instituted with neutral soap and water, the mechanical cleansing being considered of more importance than the chemical. This is followed by a copious irrigation with Dakin's solution after which the wound is packed with gauze and Carrel tubes. At such time as the attending surgeon deems most propitious, the further treatment is

undertaken. The wound is then enlarged until all affected tissues can be thoroughly explored. The contused skin edges are cut away as are all other tissues that show signs of devitalization, excepting tendons, nerves and blood-vessels. Loose pieces of bone are removed as are all other pieces that are not attached by a large enough surface to be sure of remaining vital. If there has been any separation of the skin from the underlying tissues, the skin is incised freely and the cavity made into an external wound.

After this has been accomplished, the reduction of the fracture is undertaken and immobilization is brought about by the use of a Lane plate or the one described in *The Journal A. M. A.*, Feb. 11, 1922. A Thomas splint or some modification of it is applied and the Carrel-Dakin treatment followed from this point on. When tendons or vessels are exposed it is well to cover them with vaseline gauze to protect them from the solvent action of the Dakin's solution.

As soon as firm granulations are present about the edges of the wound, skin grafting is begun. It apparently makes little difference whether the deeper parts of the wound are infected at this time or not. In some instances when the original dressing covering the graft has been removed the grafts have been covered with pus which has run in from some other part. The grafts however were firm and healthy. When the grafts are put on they are covered with silver foil and vaseline gauze which remains three days without changing. The Carrel-Dakin treatment is not interrupted. Skin-grafting is resorted to early and frequently even if only a small surface can be covered at one time.

When enough callus has formed to prevent slipping of the fragments the plate is removed. The treatment is continued as above until all the wound surface has been filled in by grafting or until a bacterial count has shown the wound to be safe for secondary closure. With the removal of the plate extension by adhesive strips or a pin is applied and this extension is continued after the application of the cast by attaching the strips to a metal frame incorporated in the plaster and extending about six inches beyond the foot.

It is not to be expected that the plate will remain in place for any great length of time or that it will remain in place until the fracture has firmly united. The objects of its use are two-fold. First, as the wound is infected and requires frequent dressings, it makes possible the necessary manipulation without displacement of the fragments or great discomfort to the patient. Second, callus is rapidly formed even in the presence of infection and if the ends can be held quietly in apposition, by the time the plate has become loose enough to be no longer useful, sufficient union has occurred to retain the alignment. The plate is at this time removed without difficulty.

The results obtained by this method have surpassed those obtained by the older method, both in regard to function obtained and in time in hospital. There are instances of course in which the bones are so badly comminuted that a plate can not be applied and others in which the wound is so small that a large incision and a plate is not indicated. In the former, extension to the end of the splint is made and the procedure outlined above followed as closely as possible. In the latter a debridement is done, the wound packed for a few days with Dakin's solution and if clean, a secondary closure performed.

To my mind, the most important parts of the treatment are the conversion of every cavity into an external wound and the true immobilization given by the plate.

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GUNSHOT INJURY INVOLVING THE ULNAR NERVE

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I am reporting this case to again call attention to the unusual course and symptoms which a gunshot wound may produce.

History: About 8 o'clock on the night of January 27, 1921, C. F. C., a male, 39 years of age, while resisting a holdup was shot and brought into the hospital on my service. He was taken immediately to the operating room, and when I saw him 20 minutes later, he presented the following symptoms: He was in some shock, but conscious. There was marked pallor and cold perspiration covering the entire body. The pulse was of fair volume, 120 per minute, but absent in the left radial artery, the side in which he was shot. The wound of entrance was about 3 cm. above the left clavicle at the junction

of the middle and outer third. There was no wound of exit, but the bullet could be felt just under the skin about 2.5 cm. medianward from the left posterior axillary line and at the level of the middle of the scapula. A large hematoma was in the left supra-clavicular region, about the wound of entrance, but no active bleeding from the wound, and the hematoma was not increasing in size. The clavicle showed no fracture, the heart and pleural cavity was negative. Believing that any injury done to the blood vessels had already been taken care of by coagulation, I did not explore the wound for injured vessels. The usual treatment for shock was first administered, including stimulants and the intravenous injection of normal saline after active hemorrhage had stopped. The wound of entrance was swabbed with tincture of iodin and a gauze drain inserted. Under novocain I easily removed the bullet, 32 caliber, which was very superficial.

Course of the Case: The temperature for the next 10 days never rose above 100° F., and very little discomfort was experienced. The next day, February 28, a very small pulsation was palpable in the left radial artery; the entire hand was edematous, and the patient was unable to flex the fingers at the metaphalangeal joints. Ulnar flexion of the hand and adduction of the thumb was impaired. Both epicritic and protopathic sensation was absent over the small finger, index finger and ulnar surface of the middle finger in the dorsal surface. Within 14 days the radial pulse had gradually returned to normal and the edema of the hand had disappeared, but the ulnar nerve paralysis persisted. Massage and various electrotherapeutic measures were applied to the hand, and the paralysis gradually grew less. To overcome the deformity of the fingers a palmar board splint was worn at night. When last seen in July, 1922, the man was able to open the hand, and at that time had about 70 per cent of the normal use of the hand. The hand shows some atrophy of the small muscles, especially the interossei, with a tendency to hyperextension of the metacarpophalangeal joint and slight flexion of the distal joints of the fingers. The small finger shows more flexion at the distal joints than do any of the others. Epicritic and protopathic sensation is still slightly impaired over the distribution of the ulnar nerve.

CONCLUSIONS

The ulnar nerve was injured in this case either directly or by pressure of a hematoma which formed in the axilla. A bullet to pass through the axilla and injure only the ulnar nerve or a hematoma to exert pressure only in the ulnar nerve I believe is rather unique.

The gradual recovery from the paralysis without operative help, when at one time it was strongly considered, teaches us that sometimes the almost hopeless appearing nerve lesion cases will improve under palliative treatment.

ACUTE APPENDICITIS IN CHILDREN

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Of late years much effort has been directed toward lowering the mortality in children's diseases. It seems to be the settled conviction that appendictis in children is rare and its diagnosis attended with difficulties, and for this reason it is often ignored as a clinical entity. The writer's experience with these cases leads him to believe firmly that this condition is far more frequent than is generally supposed and that many lives might be saved annually if the possibility of appendicitis were weighed in the bedside consideration of "the acute abdomen" in children.

Nearly half a century ago Willard Parker, at that time a famous surgeon of New York City, called attention to this aspect of the case:

"Gangrene and perforating ulcers of the appendix vermiformis, usually occur in male children, and prove fatal in from two to five or six days. No certain diagnosis can be made out. Violent symptoms of general peritonitis set in, and it is rare that medical interference is of any avail.

"Abscess of the appendix, on the contrary, generally attacks those past adult life; is slower in its progress, and presents symptoms more easy to recognize."

(For the purpose of this essay, childhood will be assumed to extend from birth to the age of ten years.)

It is generally agreed that the disease is most frequent in late childhood and early adult life, owing to the wider communication with the cecum, which enables feces and other foreign material to gain entrance. However, owing to the liquid diet up to say two years, the condition is somewhat uncommon in early life. After

about two years of age, the more active life of these young subjects predisposes to trauma. To these we have added the proverbial tendency to dietetic indiscretions, the customary frequency of catarrhal diseases and the exanthemata; finally the lymphoid structures of the body are in a state of unusual activity.

The disturbances of the digestive tract, particularly constipation and diarrhea, appear to be predisposing causes in many instances, as do infectious diseases—though less often. The direct, or exciting, causes are obscure, though any factor which lessens the lumen of the appendix will, of course, favor stagnation of the contents and allow bacteria to penetrate the wall of the organ from the mucosa. The organisms most frequently encountered are the colon bacillus and the streptococcus. Moreover, the stagnation quickly enhances the virulence of the bacteria. Nevertheless, we should not hold any one factor as at fault any more than in the case of adults.

First of all, in 1,582 reported cases, 144 were "in children" (Deaver LaRoque). In three series, 68 were from new born to ten years (Fitz Matterstock), and 60 from three to thirteen years (Gray Mitchell). According to Clopton, of the cases in the previous eighteen months at the St. Louis Children's Hospital, 9 per cent were in the first five years; 54 per cent from six to ten; and 37 per cent from eleven to fifteen years.

Coming now to more specific figures, I have collected 16,571 cases (22 authors, Sprengel, Berard-Vignard, et al.), with the following incidence:

0 to 5 years	400
6 to 10 years	1,376
11 to 15 years	2,696
16 to 20 years	2,281
Over 20 years	9,818
	16,571

The youngest patients I have come across in the case-reports are three weeks (Porak), four weeks (Albrecht), five weeks (Bamberg), six weeks (Goyens), and four of seven weeks (Demme, Elder, Blumer-Shaw and Fenger). Several years ago Jackson gave the details of a baby, 40 hours old, who died from accidental bichlorid poisoning, and at necropsy the appendix was found:

"Much elongated and congested lying upon the cecum and bound down upon it by numerous and firm adhesions. The surfaces of the appendix where it is reduplicated upon itself are firmly bound together. The small intestine and the colon above the ileo-cecal opening present no evidence of inflammatory action."

However, I believe the consensus of opinion is against regarding this as an example of appendicitis arising in fetal life. There are several instances in which the inflamed appendix has been found in hernial sacs, but owing to the uncertainty of the actual cause, these have not been included in the foregoing tabulation.

My own series of cases is as follows:

6 months	1
1 to 2 years	4
2 to 3 years	3
3 to 4 years	3
4 to 5 years	10
5 to 6 years	7
6 to 7 years	16
7 to 8 years	5
8 to 9 years	3
9 to 10 years	5
	57

In females the appendix is usually permitted a more free blood supply, owing to the proximity of the ovarian vessels, thus accounting for the less frequent incidence in that sex. Of the 2,305 cases I have tabulated, 1,424 were in boys and only 881 in girls.

Anatomic Considerations: Sprengel gives the following average measurements of the appendix in infancy and childhood:

Newborn	5.60 ccm.
1 to 5 years	7.66 ccm.
5 to 10 years	9. ccm.
10 to 20 years	9.75 ccm.

Hence it is relatively longer than in the adult.

The organ in the child is somewhat funnel-shaped, i. e., larger at the junction with the cecum. As regards location it is found more downward, inward and deeper, being often accessible to rectal palpation (Kelley).

In structure the coats are comparatively thin and delicate, especially the submucous one. This accounts for the rapidity with which perforation takes place.

Pathology. Since the changes induced are similar to those in the adult for all intents and purposes, this aspect of the subject calls for little notice. We find all stages of inflammation may be met with, from the simple catarrhal type to gangrene *en masse*. According to Alsberg, hemorrhagic foci are common in the mucosa, the epithelial lining is loosened, frequently destroyed in great part. The solitary glands are thickened and strewn with polymorphonuclears. The de-

gree of the inflammatory process increases from within out—edema is present in the submucous coat, occasionally in the muscularis, the blood vessels are engorged with leukocytes. The serous coat in addition to being congested, is frequently covered with a whitish deposit of fibrin.

Symptoms. While appendicitis in patients over ten to twelve years, or so, does not vary decidedly from the cases seen in adults, in younger children, especially infants, it is no doubt often overlooked. In the latter class we are often unable to determine the exact site of pain and tenderness, or even if these be present at all.

Of the famous triad of symptoms emphasized over and over again by the late J. B. Murphy; pain, vomiting, tenderness and rise of temperature, the second seems to be the most common as well as an early manifestation and should arouse suspicion of appendicitis, especially when followed by tenderness and rigidity, and constipation. It tends to persist even when the stomach is empty. Constipation is not so typical a finding as in adult subjects, though to be sure it is generally encountered. On the other hand, diarrhea is not infrequent and generally signifies a less-severe type.

As just observed, localization of the pain in infants and young children is extremely difficult or impossible as the small patients cry as soon as touched. Careful and repeated efforts should be made to allay the suspicions and fears of the child and secure its co-operation. This is especially necessary in rectal palpation which gives a wide scope of the lower abdomen, and should invariably be employed.

The typical pain in the right iliac fossa is not apt to be prominent, and my patients seemed to suffer intense pain generally distributed through the abdomen. When the purulent focus can be palpated through rectum or vagina, with the hand on abdomen intense pain may be established.

Rigidity of the abdominal wall is important because it cannot be controlled by the child. It was quite marked in all my cases. In addition, hyperesthesia of the skin can often be demonstrated. Rise of temperature is probably higher than in grown persons, but the exceptions are so numerous that much reliance cannot be placed on fever.

A leukocytosis was present in all my cases and was naturally of much help in the diagnosis, especially of the suppurative form. The count, however, was noticeably low, considering the nature of the infection.

Flexion of the right knee and of the thigh of the same side on the abdomen was a prominent feature of my cases. If allowed to stand or walk they bend over to the affected side.

Complications. General peritonitis as a consequence of appendicitis is much more frequent than in adults; this is due to the comparative thinness and delicacy of the coats of the organ, allowing, in turn, bacteria to reach the serious covering so rapidly that there is no opportunity for protective adhesions to form. The localized form of appendicitis is also found.

Ruptures often supervenes as early as 24 hours, if localized peritonitis gradually makes itself prominent with fever and general toxemic symptoms. This abscess often lies low in the pelvis and is detected much better by palpation through the rectum.

There may be suppurative foci at a distance, e. g., in the liver, lungs, etc. On account of the relatively greater length, adhesions may follow to the surrounding structures, chief of which are the ovary and the bladder; the latter has even been perforated.

While not exactly complications, MacCarty of the Mayo Clinic, in his examination of 2,000 appendices some years ago, 1,005 of appendicitis alone, the remainder with other conditions, stated that obliteration of the lumen may begin as early as five and be completed by ten years, and carcinoma has been found as early as five years. Several years previous, Ribbert examined 400 appendices and found 99 partly or totally occluded. From one to ten years obliteration was present in 4 per cent and increased up to 58 per cent from seventy to eighty. The youngest subject in which it was found was one of five years.

Diagnosis. Since children seldom are affected with gastro-duodenal ulcers, disturbances of the gall-bladder, bile ducts, or the pancreas, or salpingitis, at first sight it would seem the diagnosis should be arrived at reasonably quickly. But, as already pointed out, the symptoms are often obscure, while the different location of the appendix adds more difficulties.

If seen early, appendicitis—especially in very young subjects—is most apt to be confused with impaction of feces in the beginning of the large

intestine (cecum and ascending colon), and with intussusception. The symptoms of impacted feces in the cecum rather suggest colic,—spasmodic pain with neither pain nor tenderness in the intervals. In appendicitis, however, the pain is constant, while deep pressure shows marked tenderness.

So far as intussusception is concerned, in the first place it is uncommon after infancy. Any way it can hardly be confounded,—an infant or child in apparent good health is suddenly seized with colic-like pain; after straining blood and mucus are voided. The sausage-shaped swelling can usually be detected in mid abdomen or on the left side; there is no rigidity, or temperature at the start. Examination per rectum often affords much information as to the presence of a purulent focus; the apex of the intussusception may be felt. Moreover, the pain is referred, as a rule, to the umbilicus or to the site of the intussusception, not to the right iliac fossa. There is absolute arrest of gas and of the fecal current; vomiting sets in early and soon becomes stercoraceous if no relief is afforded.

Another common simulation (enterocolitis) is afforded by the sudden onset of vomiting with pain and diarrhea. Again, appendicitis occasionally is present with enterocolitis.

In the beginning of acute indigestion the symptoms often mimic appendicitis, but while there is frequently a marked rise of temperature, other constitutional manifestations are not so prominent, and the pain is not so severe.

Pybus observes that while peritonitis and distension suggest intestinal obstruction fever points to an inflammatory lesion. In peritonitis rigidity and tenderness are marked; in obstruction there is little or no rigidity, and increased peristalsis can often be detected.

In the everyday intestinal colic there is neither local tenderness nor rise of temperature, while only a short interval elapses before the manifestations subside.

With so-called "periodic vomiting," there is no local tenderness, neither is there any rigidity of the muscular wall.

Megacolon (Hirschsprung's disease) while attended by acute colicky pain, constipation and so on, should be recognized by the enormous size of the abdomen, as well as by the visible peristalsis.

In short, as Garrod expresses it, constant pain in the right iliac fossa, tenderness corresponding with the area of pain, involuntary muscular rigidity, an accelerated pulse rate, and an abnormal temperature are pathognomonic of peritonitis in that region, but the appendix is not necessarily the starting point. A diseased Meckel's diverticulum, a Fallopian tube, a breaking-down lymph node in the ileocecal angle, or a primarily pneumococcal-rheumatic, or tuberculous peritonitis starting in that region may give rise to a similar grouping of symptoms and signs. He adds a precise diagnosis cannot be arrived at until laparotomy has been performed.

"In acute tuberculous peritonitis, especially in the right lower quadrant, in addition to the fever, tenderness and rigidity, a mass may be found composed of tuberculous omentum or mesenteric glands" (Pybus).

Early involvement of the spinal column may set up severe pain, which may be referred to either side of the abdomen. However, pain only follows some movement of the vertebrae.

Hipjoint disease should rarely cause much uncertainty as symptoms on part of the intestine are lacking, while the well-known arching of the spine when the leg is fully extended, the referred pain in the knee joint, and the restricted motion in the hip itself render further assistance.

Occasionally cystitis induced by the *Bacillus coli* sets up vomiting, rise in temperature, and parumbilical pain; it should be ruled out by urinalysis, which must be frequently repeated if the first is negative. Vesical symptoms may be produced in chronic cases by the long appendix habitual to children, becoming adherent to the bladder.

By far the most difficult type of case for differentiation is that where the pain felt in the iliac fossa does not originate in that locality, but is referred from some more distant focus.

And of the lesions elsewhere probably lobar pneumonia gives rise to uncertainty in most instances. Quite recently Adams and Berger have considered this phase of our subject, based on children from two to fifteen years old admitted to the pneumonia service of the Boston City Hospital. They have never seen appendicitis mistaken for pneumonia, on the other hand, the most common error is wrongly diagnosing lobar pneumonia as appendicitis. The total series of

lobar pneumonia patients comprised 145 cases, of which less than half (66) were sent in with the diagnosis of broncho, or lobar pneumonia, while 25 were either admitted with a diagnosis of appendicitis or about to be operated on for that condition when seen by the pneumonia service. For the purposes of comparison 63 proved cases of appendicitis have been revived.

As a result of their painstaking investigations, the authors conclude:

A history of cough or pain in the chest points toward a diagnosis of pneumonia, but the absence of respiratory symptoms does not rule out this disease. A history of vomiting, abdominal pain and diarrhea is of no value as these occur as frequently in pneumonia as in abdominal conditions. The pneumonia patients always seem more ill and present a characteristic general picture not seen in the abdominal cases. If recognized, this is a very important differential point. Pneumonia patients show much more of a systemic re-action, as seen by pulse and temperature chart, than do the abdominal cases. Careful examination of the lungs will frequently reveal a small area suggesting early solidification; but if it is located in the upper half of the chest, or in patients who do not otherwise present the picture of pneumonia, it must be interpreted with caution. Abdominal tenderness and spasm are relatively frequent in pneumonia, but are of a type dissimilar to those found in acute abdominal conditions. A high leukocyte count favors the diagnosis of pneumonia, except when peritonitis or appendix abscess is suspected, in which case it is of no value in differentiating the condition from pneumonia.

Prognosis. This is favorable for the less severe examples of acute catarrhal appendicitis, but for reasons already given suppuration and formation of purulent foci are common in these young patients. Moreover, they have but little resisting power to this—and other—acute bacterial invasion; and in turn, the younger the patient, naturally the less the resistance. Given an early diagnosis and an equally early intervention, the prognosis is favorable. (The mortality after operation is given in the next section.)

Treatment. The treatment of acute appendicitis in children, as in adults, connotes operative measures. Here I am in thorough accord with Deaver's teaching of some years back:

The time to operate, then, is before the storm breaks, and while the noon-day quiet holds the hill. Twenty-eight of the appendices in my series were ballooned with pus, and on the point of exploding, when removed. Such an organ, like Vesuvius, threatens the entire peritoneal cavity. A unique feature of appendicitis, up to and during this stage, is that the entire area of acute inflammation and phlegmon can be removed with nothing but benefit to the patient. Where else in the body is such a thing possible? Can a digit, the seat of a felon be amputated with propriety? Can a pyosalpinx be removed with the same disregard for the value of the organ? Can even a surface phlegmon, as a carbuncle, be removed *in toto* in a similarly satisfactory manner? Inconceivable! Here, then, is an organ which, together with the disease that has attacked it, can be ablated without depriving the patient of an organ or tissue of any recognized value.

Deaver adds that the post-operative treatment is highly important, and begins immediately on removal from the operating table. When drainage has been necessary, the child should be placed in the Fowler position, though not longer than 36 hours, for fear the coils of bowel crowding the pelvis "by gravity, adhere to each other and cause intestinal obstruction." Enteroclysis, I am sure, is most beneficial for pus cases. Nausea, spitting up, and vomiting after operation, usually yield to the stomach-tube. If these are persistent, however, and if there is a sudden, severe pain becoming paroxysmal, these are the initial symptoms of obstruction.

The mortality in the 500 cases of Deaver was 4.6 per cent, and in Clopton's series, less than 4 per cent. In the 310 operations done by Riedel, the mortality was 16.4, and in those performed at the Giessen clinic, tabulated by Naumova, even higher (17.1%) for those from one to five years, for those in the next decade, however, it fell to 7.6.

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THE MODERN CONCEPTION OF ACIDOSIS*

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Inasmuch as the chemistry of acidosis has in recent years suffered considerable revision, it has seemed to the writer not out of place to review this phase of the subject in as intelligible a way as possible. Without a clear conception of what is meant by hydrogen-ion concentration, buffer salts, and similar terms, much of the modern literature must remain very vague for the physician who has not kept in touch with the newer chemical terminology. Therefore at the risk of criticism for explaining what may seem too elementary, I shall call your attention to the subject of acidimetry, before discussing the particular bearing which this may have on biologic processes.

All chemical substances may be divided into two main classes, electrolytes and non-electrolytes. The former in solution are conductors of the electric current and are decomposed by it, the latter neither conduct the current nor undergo chemical change from its action. The hypothesis given in explanation is this—that electrolytes in solution become dissociated into atoms or groups of atoms called ions, each bearing a positive or negative electrical charge, and that when an electric current is passed through the solution, the positively charged ions stream toward and collect at the negative pole, and the negatively charged ions at the positive pole. Thus, in solution sodium chlorid is dissociated into positively charged Na ions and negatively charged Cl ions; magnesium sulfate into positive Mg ions, and negative SO_4 ions. On the other hand, the molecules of substances such as sugar, alcohol, gelatin, etc., are not dissociated in solution, and hence neither conduct the current nor are decomposed by it.

Acids are dissociated in solution, and on the degree of their dissociation depends their acidity. In other words, the true acidity of an acid depends on the number of free hydrogen ions in the solution, and likewise the alkalinity of a base on the free hydroxyl ions.

Now this is quite different from the titrable acidity or alkalinity. 1 cc. of normal H_2SO_4 and also 1 cc. of normal CH_3COOH are each exactly neutralized by 1 cc. of normal alkali. Yet it is evident that sulfuric acid is far more active an acid than is acetic acid. The explanation of this is as follows. In the solution of the poorly dissociated acetic acid, as each H-ion is neutralized, another is dissociated to take its place, until finally all are dissociated and neutralized.

In the solutions of each of these two acids, which we shall take by way of illustration, there exist both ions and undissociated molecules. The difference of actual acidity is due to the greater degree of dissociation in the solution of acetic acid. This we may express diagrammatically as follows:

DISSOCIATION OF ACIDS

Diagrammatic only, to show the difference between a strong and weak acid.

Solution of Sulfuric Acid

H H H H SO_4 SO_4
H H H H SO_4 SO_4 H_2SO_4
H H H H SO_4 SO_4

Solution of Acetic Acid

CH_3COOH CH^3COOH
H CH_3COO CH^3COOH CH_3COOH
CH_3COOH CH^3COOH

It has been found that the electrical conductivity of a solution is a very accurate index of the amount of dissociation of the molecules of the solute, and hence this measurement will show the real acidity of an acid, namely, the H-ion concentration in the solution.

Pure distilled water is taken as the substance whose H-ion concentration shall constitute neutrality. Water is dissociated to a very slight extent, and this reaction proceeds to an equilibrium so that

$$\frac{(H)\ X(OH)}{(OH)} = \text{a constant}$$

The brackets indicate concentration per liter of ions or molecules respectively.

This constant, at a temperature of 21°C (for temperature is also a factor) equals the very small fraction, .00000000000001. Now evidently, since there are equal numbers of H and OH ions, the H-ion concentration, in accordance with the above equation will be the square root of the constant. (H) equals .0000001.

It is also evident that solutions with a greater concentration of H-ions must be acid, and those with a smaller concentration, alkaline, and furthermore, that, since the OH-ion concentra-

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tion varies inversely with the H-ion concentration, the latter may be used as an index, not only of acidity but of alkalinity.

The conventional terminology is that proposed by Sörensen, in which the logarithm of the concentration, without its minus sign, is used. This avoids the cumbersome fractions which would otherwise be necessary.

For instance, in distilled water, the H-ion concentration is one ten millionth. The common logarithm of this fraction is —7. Therefore a P_H of 7 indicates neutrality, one of less than 7, acidity, and one of more than 7, alkalinity.

The reciprocal relations of the H and OH ion concentrations are shown as follows:

P_H = 0	1.	.00000000000001
H-ion	Concentration	OH-ion Concentration
1	.1	.0000000000001
2	.01	.000000000001
3	.001	.00000000001
4	.0001	.0000000001
5	.00001	.000000001
6	.000001	.00000001
7	.0000001	.0000001
8	.00000001	.000001
9	.000000001	.00001
10	.0000000001	.0001
11	.00000000001	.001
12	.000000000001	.01
13	.0000000000001	.1
14	.00000000000001	1.

The acidity as measured electrically can then be transferred to this logarithmic scale in the following way.

Suppose that it is found that decinormal HCl at 18°C, is ionized to the extent of 84%.

.1 x .84 = .084 gms.

$$\text{Log } \frac{84}{1000} = \text{Log } 84 - \text{Log } 1000 = 1.92 - 3.00 = -1.08$$

$P_H = 1.08$

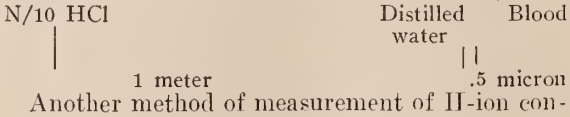
Similarly, suppose that decinormal acetic acid is ionized to the extent of 1.36%

.1 x .0136 = .00136

$$\text{Log } \frac{136}{100{,}000} = \text{Log } 136 - \text{Log } 100{,}000 = 2.133 - 5.000 = -2.867$$

$P_H = 2.867$

The foregoing will also serve to illustrate the enormous difference between the H-ion range of solutions in use in the laboratory and those encountered in the human body. The difference in acidity between the decinormal HCl and distilled water is about 2,000,000 times as great as that existing between the blood and distilled water. On a scale 1 meter in length the latter distance would be microscopical.



Another method of measurement of H-ion concentration should be mentioned in passing, that by use of indicators. Various indicators change color at various P_H values, and by comparing the color of the mixture of the indicator and the unknown with mixtures of the same indicator and solutions of known H-ion concentration, the value of the unknown can be determined.

It is very difficult indeed to keep a solution of acid, or the least trace of alkali in the walls of concentration. The merest fraction of a drop of acid, or the least trace of alkali in the walls of the containing vessel will change this enormously. However, recourse is had here to a procedure, which, as we shall see later, has the most important bearing on the regulation of acidity in the human body.

If to a solution of sodium acetate some HCl be added, it is found that the H-ion concentration is but slightly affected, much less so than if the same amount of acid had been added to distilled water.

What happens is explained as follows. Sodium acetate in solution like all salts, is almost completely ionized, so that on the addition of the strong acid, there will exist the following ions

Na CH_3COO H Cl

But acetic acid will not exist in solution largely dissociated. Therefore the CH_3COO ions unite with the H ions, and only as many are left ionized as would exist in an acetic acid solution. In other words, the acidity becomes not that of the stronger, but that of the weaker acid.

This is the so-called buffer or tampon action and is possessed by a number of substances, all of which have this in common, that they are the salts of weak acids, acetates, borates, carbonates, phosphates, etc.

Investigations of the P_4 value of the blood have shown that it is about 7.4, that is, slightly on the side of alkalinity. It is most remarkable that this is perhaps the most constant thing in biology. The cells of the body are capable of surviving marked extremes of temperature, nutritional disturbance, and other varying conditions, but live in a changed H-ion concentration they cannot. The constancy of the reaction of the blood is the *conditio sine qua non* of their existence.

The water of the sea bears a close resemblance to the human blood in this respect, and as pointed out by MacCallum, it seems that the

cells of the land animal still require a habitat similar to that of their protozoon ancestors.

However in all body metabolism acids are being formed. The acid change seen in the excised contracting muscle of physiologic experiment is typical of every vital process. Therefore some mechanism must be at hand for the neutralization and removal of these acid metabolites, else their accumulation in the blood must raise its acidity to a point lethal for cell life.

The factors involved are as follows.

Carbon dioxid is constantly being excreted through the lungs. In solution as H_2CO_3 this gas is a weak acid, hence its elimination is one factor in the maintenance of neutrality.

Also, in some way which we do not yet understand, the kidneys are capable of excreting an acid urine from the neutral blood.

The NH_3 formed in the metabolism of proteins is used for the neutralization of these acid products. The NH_3 in the urine is just this amount needed. The rest is changed to urea.

And finally, the blood is well supplied with buffer salts which combine with the acid radicals for the time being until they can be excreted. These salts, chiefly carbonates and phosphates, together with the amphoteric colloids of the plasma have been shown to be exceedingly effective, especially in the particular combination in which they exist in the blood.

The buffer action of the carbonates is as follows. Pure sodium bi-carbonate in solution is slightly alkaline. Sodium carbonate is somewhat more alkaline. CO_2 is very slightly acid. A strong acid added to a solution of sodium bicarbonate will not acidify the solution more than would the addition of an equivalent amount of CO_2. A strong alkali will not render it more alkaline than would the addition of an equivalent amount of Na_2CO_3. It requires the addition of a very considerable amount of acid to such a solution to raise its P_H value markedly, whereas the smallest fraction of this would, if added to distilled water, raise its acidity enormously.

Mixtures of the phosphates act in the following way.

$$Na_2HPO_4 + HCl = Nah_2PO_4 + NaCl$$
$$NaH_2PO + NaOH = Na_2HPO_4\ H_2O$$

Alkaline phosphate reacts with acid to produce the acid phosphate and a salt.

Acid phosphate reacts with alkali to produce alkaline phosphate and water.

And thus the end effect of addition of strong acid or alkali to a phosphate mixture is the comparatively small difference in H-ion concentration between an acid and an alkaline phosphate solution. The kidneys normally excrete an excess of acid phosphate and thus the balance is maintained in the body.

The colloids of the blood have undoubtedly an important part in the maintenance of an even reaction of the blood, but the symptoms of acidosis are due to the loss of free circulating bases. Of these the carbonates are the most important, inasmuch as they are the carriers of CO_2 from the tissues to the lungs.

The reaction is as follows.

$$Na_2CO_3 + CO_2 + H_2O = 2NaHCO_3$$
In the tissues
$$2NaHCO_3 - CO_2 - H_2O = Na_2CO_3$$
In the lungs

The above reactions show the extreme importance of these salts. Without them the CO_2 of the tissues cannot be transported. The bicarbonates are slightly more acid than the carbonates, and this is the ground for the theory that the H-ion is the real stimulant of the respiratory center.

Once the pathological chemistry of acidosis is understood, the symptoms are easily explained. Hyperpnea, or air hunger is the cardinal sign. With this, in contradistinction to the dyspnea of asphyxia, there is no cyanosis, and the blood is rather extraordinarily red and the mucous membranes pink.

The tissues are asphyxiated because internal respiration cannot take place. The hemoglobin of the blood is saturated with oxygen but none can reach the tissues because the CO_2 cannot be returned. The fire of the body cells is smothered in its own ashes.

There has been some quibbling over the name acidosis, and the term ketosis has been suggested for that form occurring in diabetes. However all forms of acidosis are the same from practical standpoint, because the same mechanism is at work, be the acids endogenous, as in diabetes, or exogenous, as in acid poisoning.

The only distinction of practical import is that in ketosis, the tests for acetone and diacetic acid in the urine are positive. However it should be noted that this is only presumptive evidence of the presence of B-oxy-butyric acid, which is the real villain. In fact, some cases of diabetic acidosis have been reported in which acetone and

diacetic acid were absent. Unfortunately there is no test in common use for B-oxy-butyric acid.

We may also dispose of the terms compensated and uncompensated acidosis, by remembering that such a distinction is a purely quantitative one. Fatal acidosis results from a gradual and progressive loss of body bases, and it is probably for this reason that treatment is so important before their store is exhausted. Every clinician knows that acidosis is much more easily prevented than cured.

Diabetes is of course the disease in which acidosis is most often seen, but it is not the purpose of this paper to discuss the metabolism of this disorder. Suffice to say that the symptoms of acidosis must be the same, from whatever cause, on account of the underlying chemistry.

A definite acidosis has been found in nephritis, chiefly in the acute and chronic interstitial types. Here it is apparently due to the inability of the kidneys to excrete the acids arising from normal metabolism.

Sellards found often a severe acidosis in Asiatic cholera. Two explanations are offered, the acute nephritis which so often supervenes, or the loss of bases in the evacuations.

Similar to this must be the acidosis observed by Howland and Marriot in certain cases of severe diarrhea in infants and young children. Why these should be so fatal in spite of alkaline therapy is a problem as yet unsolved.

Acidosis has been described in other conditions, and that following chloroform or ether narcosis should be mentioned.

Let us now consider what chemical tests are at hand to confirm the clinical diagnosis. Measurement of the H-ion concentration of the blood has been proved inadequate, as Folin, on *a priori* grounds, predicted.

If the term acidosis means an acid condition of the blood, then it almost never exists in the living animal. Even the most delicate measurements show only the very slightest rise in blood acidity, and then only just before death. Cell life is incompatible with a rise in H-ion content, and before this can happen every available bit of alkali in the body must be used up.

Estimations of the ammonia percentages in the urine do not furnish very reliable criteria, and tests for the ketone bodies are only presumptive signs. They are valuable merely as the danger signal that acids are being formed in excess, and that depletion of the body bases is threatened.

Fairly definitive proof of the presence, and estimation of the degree of acidosis may be had in two ways, by determining the CO_2 tension of the alveolar air, or the CO_2 combining power of the blood. The CO_2 tension of the venous blood and of the alveolar air must be the same since diffusion exists between the two at all times in the lungs. Hence a lowered tension in the latter means, with few exceptions, acidosis. The exceptions are easily differentiated clinically.

Van Slyke's method of determining the CO_2 combining power of the blood has the advantage of requiring no co-operation by the patient in the collection of the specimen. Briefly, the blood-serum is exposed to an atmosphere rich in CO_2, 1 cc. is measured into a special apparatus, sulfuric acid is added, and the liberated gas is measured, and corrected for temperature and barometric pressure.

Tests by either of these methods give results which are quite comparable.

Certain strictures on these tests were made by McLeod, who considered the test of Sellards the optimum one. This is extremely simple, and involves no more than giving the patient 5 gms of sodium bi-carbonate, and testing the reaction of the urine. In patients with a normal content of bases the urine will promptly become alkaline to litmus. This is considered to be a more definite proof of the existence of a sufficient amount of base in the body tissues as well as blood.

To those however, who believe that the use of alkali in diabetes is deleterious, this test involves a bad method of treatment. One thing is certain, that limitation of fat in the diet has done more to avoid acidosis in this disease, than any treatment with carbonates.

Sound clinical experience must take precedence over laboratory evidence, for too often other factors lie hidden, of whose existence the cock-sure experimentalist is unaware. However, in general, the facts of physiology and pathology are the basis of rational diagnosis and therapeusis, and if these have been made clear in their relation to this one morbid condition, the purpose of this paper has been accomplished.

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ACUTE ABSCESS OF THE NASAL SEPTUM: CASE REPORTS*

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Acute abscess of the nasal septum is a condition very infrequently encountered. Particularly is this true when the abscess is of idiopathic origin or when it is associated with or is a sequela of an acute infectious disease. H. L. Lack places the proportion of septal abscess in all cases attending a special clinic as 1 to 2,000 cases. Text-books on nose and throat only give a passing mention of this condition.

Acute abscess of the nasal septum results from local processes as trauma, after operations, or as a complication of infectious diseases, such as typhoid, influenza, sinus suppuration, smallpox and tuberculosis. It is usually found in children following a fall or blow on the nose, when a fracture of the nasal septum occurs with formation of a hematoma between the perichondrium and septum. Pyogenic bacteria invade the hematoma thus converting it into an abscess. The cartilaginous portion of the septum in most cases becomes perforated or necrosed chiefly on account of the pressure and lack of nutrition brought on by the abscess elevating the mucoperichondrium. Not all cases of hematoma become infected. Kicer reported 5 out of 13 cases became abscessed.

The clinical findings in acute septal abscess are quite characteristic. The constitutional symptoms may be severe. Very high temperature may prevail: pain across the bridge of the nose is severe. The nose externally is markedly swollen, red and hot. On elevating the tip of the nose, anterior rhinoscopy reveals very reddish bulging tumors, occluding both nostrils. Examination with a probe discloses that the swellings emerge from both sides of the septum and are boggy to the touch. The nasal stenosis particularly forces the patient to seek relief. In the differential diagnosis hematoma and ulcerative syphilis of the septum are to be considered. However, the diagnosis between these two conditions and abscess should offer no difficulty.

*Read before the Northwest Branch, the Chicago Medical Society, Nov. 18, 1922.

The outcome of acute nasal septal abscess is usually favorable. Meningitis or abscess in the anterior fossa of the skull may develop via the anterior and posterior ethmoidal vessels. In Cline's and Culbert's cases septicemia followed from the pus being absorbed in the septum. In Richard's case several months ensued before the patient was strong enough to work. The sequela to be feared is saddle-nose. However, as long as some cartilage remains as support such is not probable. The treatment of septal abscess is surgical; to provide proper drainage of the pus and debris. Voorhees makes a Killian initial submucous incision and a second incision running near and parallel with the floor of the nose from the middle point of vomer to almost the first incision. The mucoperichondrium is reflected and the entire abscess cavity curetted with flexible curettes until all detritus is removed. Keiper considers it bad surgery to curette an abscess cavity.

The number of cases of septal abscess in all, reported in the literature is comparatively very small. Grunwald reported four cases, three in children and one in a young man. Jurasez reported a case where the septum necrosed with collapse of the dorsum of the nose. Ballenger reported a case due to removal of a septal spur, Parsons of a case due to anthrax. J. A. M. Heunmeon reported two cases, one in a child two years old after a fall, the other in a male 26 years old. In the latter case the only history was a syphilitic infection five years previously and symptoms of increasing obstruction in both nostrils. A bilateral swelling of the septal mucous membrane filled both inferior meati. There was no fever. An incision evacuated pus and with due attention the condition was cured. J. B. Horgan of Cork, cites a case of septal abscess of six years duration following a fall from a horse. An irregular thickening anteriorly obstructed both nostrils. He thought it was a fracture with dislocation of the septum. On making an incision thick yellow pus oozed out with collapse of the septal thickening. Further inspection disclosed a very small and attenuated remnant of cartilaginous septum and that superiorly and anteriorly in the region of the columella. The rest of the cartilage and part of the bony septum were disintegrated and

in the form of small loose spicules. J. Price-Brown of Toronto, reported a case in a boy ten years old, who was struck on the nose. On the 25th day he was called to see the boy and on examination found a septal abscess with much destruction; but the triangular cartilage was not entirely destroyed so that no saddle-nose resulted. Killian reported a case of septal abscess following a dental abscess. Kuttner has recorded three cases, and Wroblewski five cases as idiopathic in origin. Glassburg in a recent number of the J. A. M. A., cites two cases, one in a boy due to picking the nose, the other in a young man as a result of a blow on the nose.

Acute abscess of the nasal septum complicating influenza is uncommon.

REPORT OF CASES

Mrs. S., 34 years old, married, has two children; was referred to me by Dr. H. Schneider. Her past history was negative including the ears, nose and throat. She had been in good physical health until Feb. 5, 1922, when she developed influenza. At this time there existed a mild wave of the "Flu" throughout the city. Mrs. S. was in bed two days when the children and husband successively came down with the disease within the next two days. Although she had a slight elevation of temperature and felt weak, she was forced to attend the children. On Feb. 9, or 4 days after she became ill, she began to experience pain in her nose. Her mind more concerned about the rest of her family, she paid little attention to this symptom. The next day there was a slight redness and swelling of the nose. The pain became more pronounced and her temperature rose as the redness and swelling increased in severity. Also breathing through the nose became more difficult. When I saw her on Feb. 12, or three days after the nose symptoms developed, the lower two-thirds of her nose was greatly swollen and red, her face was edematous, and the patient looked septic. Her temperature was 103.5° F. and at first glance the picture suggested erysipelas. The patient complained of severe pain across the bridge of the nose and inability to breath through the nose. Anterior rhinoscopy revealed reddish masses occluding both anterior nares. With a Freer blunt elevator the masses were seen to originate from the anterior portion of the septum, were tender and somewhat boggy to the touch. The swelling was more pronounced on the right side. There was no sign of an abrasion. I made a Killian initial submucous incision on the right side and a greenish yellow pus spurted out under pressure. After several teaspoonfuls of pus were evacuated both sides of the septum shrunk. I inserted a Freer blunt elevator into the cavity and found a good share of the cartilage had been destroyed. A gauze drain was inserted. The drain was changed daily for five days until no pus was present, when the incision was permitted to close. The nares were cleansed with an alkaline nasal spray. The pain, redness and swelling quickly subsided and the temperature reached normal in a few days after the incision. The laboratory report of a smear of the pus showed short chains of streptococci and staphylococci and many pus cells. Four days after the incision closed Mrs. S. phoned me, she was again having fulness in the nose, but no pain or fever. Examination revealed boggy masses within the anterior nares but not so red and large as the first time. I made an incision as before and evacuated a bloody fluid with a few spicules of cartilage. A gauze drain was inserted. In a few days the cavity was clear and wound permitted to close. The last examination made three weeks later showed a slight deviation of the right side of the septum in its upper third, a condition which she probably always had. Enough cartilage remained to prevent a saddle-nose.

Miss E. K., 23 years old, seen in conjunction with Dr. S. Weiner, developed influenza on September 25, 1922. Five days later she began to experience some pain in her nose. Also a gradual stuffiness of both sides of the nose developed so that on the third day after entry of nasal symptoms her nose was practically occluded. Temperature ranged about 100.5° F. Externally little swelling and discoloration of the nose were present and a mild degree of sensis was evident. The nasal stenosis compelled her to seek relief. Anterior rhinoscopy revealed the findings described in the previous case. There was to be seen a slight depression over dorsum of nose, a condition which the patient claims did not exist prior to this illness. An incision was made just behind the muco-epidermal junction on the right side of septum and a mixture of blood and pus was evacuated. The greater portion of the septal cartilage was found necrosed. The incision was kept open with gauze drains and allowed to close on the fifth day. Two weeks later when the patient presented herself the depression on the nose was very noticeable. In this case there had been enough destruction of the sental cartilage to produce a saddle-nose although the symptoms were not so acute as in the first case where no sequela resulted. Two Wassermann tests taken within a month were negative.

These two cases of acute abscess were unusual complications of influenza.

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A PLEA FOR THE ERADICATION OF CHONIC ENDOCERVICITIS.*

JOHN O. CLETCHER, M. D.
CISCO, ILLINOIS

The importance of the early recognition of chronic infections of the female pelvis is fast becoming manifest in a large percentage of patients. Most of them complain of backache, leucorrhea and various constitutional symptoms. You get the same syndrome in many cases of chronic endocervicitis as you do in other foci of infection, namely chronic tonsilitis, chronic gall bladder infection, dental infections, etc. The most common of these symptoms are lumbo-sacral backache, leg cramp, migraine, debility and wasting of body physically, mentally and morally. True, many cases are practically symptomless, and apparently suffer little even when deep ulceration and glandular involvement exist. But the same may be said of many chronically diseased tonsils, dental infections, etc.

Sooner or later chronic endocervicitis must develop much pelvic pathology. Aside from the tissue changes of the cervical mucosa and its glandular element, the lymphatics, stroma, Nabothian follicles and periglandular connective tissue, the infection extends in the form of a cellulitis and travels upwards as an ascending lymphangitis, which undoubtedly is responsible for much perisalpingitis, ovaritis, peritonitis, uterine displacements and pelvic adhesions.

Owing to the peculiarity of the glandular structure and its secretions, the cervical mucosa is more prone to infection than the vaginal mucosa and the endometrium of the corpus uteri. One of its functions is to protect the endometrium of the uterus from bacterial invasion from the vagina. It might be compared to a lymphatic gland standing guard to the structure beyond.

Chronic endocervicitis is common among all classes and races of people. At first it is always acute and is so resistant to spontaneous healing and local treatment that it soon becomes chronic. It may be primary or secondary. Primary, when starting directly in the cervix and secondary when the infection comes from adjacent tissues. The cervical mucosa is subject to invasion of any or all bacteria that have their habitat about the vulva and in the vagina, and from pelvic cellulitis. The most frequent organisms found are the pus-forming bacteria, the staphylococcus, streptococcus, gonococcus, colon bacillus and, in some of the rarer forms, the tubercle bacillus, and spirochaeta pallida. Infection occurs either by direct bacterial invasion of the mucosa and its glands or by an atrium of infection being opened by lacerations during childbirth, dilitation, operations, forced abortions, curettage and ill-fitting pessaries. But these traumatic injuries will not cause chronic endocervicitis unless they become infected. Acute infections are often overlooked or discharged too early, unless the leucorrhea is profuse, letting the case run into the chronic type, which, without successful treatment, may be carried through life.

Reviewing the symptoms we have cases so mild as to show no discharge or symptoms and are only recognized when found by examination for other reasons. Mild cases that only show leucorrhea and slight backache before and after menstruation, and severe cases giving intermenstrual discharge and lumbo-sachral backache, tenderness of pelvic organs, abdominal distress, myalgias and wasting.

Leucorrhea is the prevailing symptom. (Some authors say all chronic leucorrhea is attended by some form of chronic endocervicitis.) It may be scant or copious, and ranges from a mucoid, viscid, transparent or opaque to a mucopurulent in character, depending on the virulence of the exciting organism, stage of progress, and amount of suppuration. The discharge is more profuse a few days before and after menstruation and seldom has much odor unless infected by the colon bacillus or is attended by sloughing.

Menstrual disturbances from blood and lymph stasis, muscular stiffening, induration and posterior cellulitis are often met with as menorrhagia and metrorrhagia.

Sterility is a frequent symptom and must be considered as an important one. The mildest cases of endocervicitis are often sterile. Even a small, thin plug of mucus in the cervical canal may be sufficient to stop the progress of the spermatozoon. Inflammation and hyperplasia are also important factors in causing sterility by occluding the cervical canal. Many barren women have become pregnant after being cured of

*Read at 48th Annual Meeting, Southern Illinois Medical Association, Cairo, Ill., Nov. 2, 1922.

chronic endocervicitis, which is sufficient proof of its causing sterility.

Let us preserve the female reproduction physiology. Youth being our greatest national asset, and with many of the endocervicitis cases sterile, these women become liabilities. We must strive to prevent this malady and institute the best available treatment for its cure.

The treatment must be divided into two phases: preventive, and the eradication of the focus of infection.

Under preventive treatment I would suggest that the medical profession not lose sight of the fact that the general public is clamoring for knowledge of health promotion. The time has passed for the layman to be totally ignorant in keeping his body physically fit. Mothers are demanding a fair knowledge of nursing and disease prevention for use in their homes. The average expectant mother is embarrassed by her ignorance and lack of knowledge pertaining to motherhood. It is due to our failure in practice and our schools to supply this knowledge that we have been given such a poisonous instrument as the Sheppard-Towner Bill.

How many mothers know how to care for their breast, nipples and organs of parturition after births? How many mothers know the correct technique of cleansing a baby's buttock and genitalia after soiling from bowel movements? True, millions of babies have grown into adulthood, fine physical specimens, without aseptic care; but there are thousands of dead, cripples, blind and diseased due to neglected cleanliness during early life.

The large majority of vulvo-vaginitis in babies and young girls is due to contamination from the rectum. These infections are hard to cure and many of them become chronic, lasting into puberty and womanhood as a chronic endocervicitis. I will relate one case of a nine-year-old girl, who had been afflicted with mucus colitis since she was an infant. She came to me complaining of itching and scalding of external genitalia and burning in the course of the vagina. She had a foul discharge at the time, and gave a history of having had three other attacks similar to this, except the discharge had had no distinct odor. After some external douching and applications had been applied for some days without improvement, it was thought best to make an internal examination, and to my surprise I found the cervix one large ulcerated mass. Luckily these children resist and stand these infections well, but there is not a doubt that most of the cases of endocervicitis found about puberty have a similar history.

The indiscriminate use of douches is becoming very unpopular and rightly so. Many women for the past few years are taking douches galore for no other reason than to prevent pregnancies and stop discharges caused by douches. Many discharging vaginas will become dry if the douches are omitted. No patient should use douches until they acquire and follow the correct technique for taking them. Many cases of cervical infection are caused by contaminated douche apparatus and solutions. Mothers are often guilty of advising their daughters to take douches for cleansing after menstruation. Cool soap suds externally is much safer and equally efficient. Hot soap suds bathing and douche tubes might easily lead to masturbation in young girls. All masturbators develop leucorrhea and probably none escape chronic endocervicitis. Every woman contemplating marriage should feel free to go to her family physician and get proper instruction regarding marital life. Further instructions as to the care of the genitalia should be given, since unclean and excessive coitus, non-aseptic douching, preventing pregnancies by their various ways, are most indicative of chronic endocervicitis.

The active treatment may be divided into palliative and surgical. The more rational is surgical, yet there are some cases that for various reasons cannot be treated surgically. Patients suffering with tuberculosis, chlorosis, anemia, diabetes, cardiac lesions, kidney and debilitating diseases should have nursing and constitutional treatment sufficient to enable them to undergo surgical treatment. This would consist of hygienic, dietetic, physical and medicinal. Under the medicinal treatment not forgetting the use of soluble iron arsenate or, even better in most cases, neo-salvarsan.

A knowledge of psycho-analysis is necessary in some of the nervous cases as many are improved by having their mental worries abated.

We cannot say much in favor of the various so-called local treatments. Tamponade and applying antiseptics and escharotics to the infected cervix are totally inefficient except perhaps in cases where there is only a slight erosion of the

external os. Sturmdorf, of New York, calls local treatments "medical tinkering," and a good name it is. Chronic endocervicitis associated with retroversion is often improved by tampon treatment if the position of the uterus is corrected and better drainage established. It is this result that probably has led many to think the treatment was efficient because retroversion is incident to chronic endocervicitis in a high percentage of cases.

The induction of foreign protein, ten per cent. phenol solution, and twenty-five per cent. alcoholic solution of distilled water into the mucosa and interstitial tissue of the cervix have been reported as helpful treatment.

Crisscross scarification deep into the area of infection and pressure swabbing with iodized phenol solution to the glandular pockets have proven helpful. An interesting article by Byford on "The Cure of Chronic Endocervicitis by Multiple Scarification," appears in the Illinois Medical Journal of September, 1921.

Curing by partial and complete amputation of the cervix is not being considered any more, unless the cervix is diseased beyond reconstruction. The disadvantages of amputation of the cervix are too many to consider in this paper.

Schroder's operation for excision of the cervical mucosa, and Sturmdorf's cone operation for excision of the cervical mucosa by removing some muscular tissue with the mucosa, are successful in 65 per cent. of the cases. This leaves 35 per cent. of the cases operated on not cured. I believe the reason lies in the fact that in doing the operations we are not able to carry our excision high enough to get the entire infected area without going through the internal os. Every case of long-standing endocervicitis extends to the internal os, if not beyond into the endo-metrium of the corpus uteri. Therefore, it is indicative that in many of these operations a small area of infection remains. After a short time the vaginal mucosa that has replaced the cervical mucosa becomes eroded from the discharge and the patient may develop practically the same symptoms as before her operation. I would refer to an article by Byford, "A Neglected Form of Cervical Endometritis," Illinois Medical Journal, November, 1920.

I wish to make special mention of a method of curettage I have been using in the treatment of chronic endocervicitis. It is a repeated dilatation and curettage, and unless the infection extends to and through the internal os it can be done by local anesthesia in one's office. Otherwise if the endometrium of the uterus is involved the patient should have general anesthesia and the uterus curetted also.

The patient is prepared exactly as for a major operation, and placed in the lithotomy position. The anterior lip of the cervix is grasped and held with Volsella forceps. Dilatation is done by uterine dressing forceps, or uterine sounds. It is seldom necessary to use a more forcible dilator. If the cervical canal is already open enough to use the curette, dilate more. The dilatation is helpful in expressing the mucus and infectious material from the glandular tissue. You can readily see after dilatation is completed that the mucosa is much thinner. Use the curette until you get the characteristic grating on the musculature, and until no more hyperplastic tissue is in evidence. Curette well up to the internal os. Be sure you remove all infected mucosa possible. Apply gauze pressure to the denuded area for a few seconds to stop oozing of blood. Pack the cervical canal with gauze saturated with 3 per cent. tr. iodine, letting one end extend through the vagina externally so the patient or nurse may remove it at the end of twenty-four or thirty-six hours, as you instruct. I instruct the patient or nurse to follow the removal of the gauze with one per cent. Dakin's solution douche. The cervix is packed in this manner every two days for four or five times, then twice a week for three weeks and once a week for four weeks. If there is any sign of the disease returning at the end of three months I repeat the dilatation, curettage and packing the cervix, and again at the end of another three months when necessary.

I have treated fourteen cases by this method recently, and only two have had the third operation; ten the second operation, and two were apparently cured at the first setting. I am not saying as yet that any are permanently cured. There has not been enough time elapsed to warrant saying cured. Some authors have said one thorough curettage cures, but I cannot say that from my experience. I must say, though, that the twelve cases that had one and two dilatation and curettage each are apparently cured at this time. They have no discharge, no backache; there is no cervical obstruction or constriction; they menstruate normally, and two have gone through

normal pregnancies. We will not consider this as the operation of choice but consider it worth trying and far superior to tamponade, frequent applications of antiseptics and escharotics, or trying to drown the disease by frequent douching.

UNUSUAL FOREIGN BODY IN EYE

W. D. Drake, M.D.
EFFINGHAM, ILL.

Mr. B., aged 65 years, living at Wheeler, Ill., appeared at my office Dec. 10, 1922, complaining of a sore eye; said he was looking for eggs in wheat patch three months previous, when he suddenly felt something in his eye, had some pain for a few days with lachrymation, consulted his family physician who assured him there was no foreign body in his eye, made his diagnosis of a mild conjunctivitis and gave him treatment for same. After several days, with no improvement, patient consulted another physician, who also told him there was no foreign body in the eye. In the meantime two other physicians examined the eye and assured him that the diagnosis made by the first physician was correct and that he only had conjunctivitis. On examination I found some conjunctival injection with lachrymation, pupil contracted, tension normal. Patient complained of some pain in the eye, with lids adherent in the morning. Examination with loup showed nothing on the bulbar conjunctiva. On everting the upper lid nothing was detected; on doubly everting the tarsus, I found a small body of granulation tissue, from which pus was exuding. From a small incision with Graefe knife in the granulation tissue I extracted the seed part of a weed, the pod measuring 5 mm by 3 mm with five sharp prongs on the external end. This case as reported emphasizes how necessary it is to make a thorough examination of the retro tarsal fold when a patient complains of foreign body in the eye. Also that a foreign body of considerable dimensions can be concealed in the retrotarsal fold without giving much pain.

HE GOT IT!

Patient: "What I need is something to stir me up—something to put me in fighting trim. Did you put anything like that in my prescription?"

Doctor: "No, you'll find that in the bill."—*Medical Standard.*

Society Proceedings

CARROLL COUNTY

May 9, 1923, the Carroll County Medical Society met at Mt. Carroll. Dinner was served at the Raisch Cafe at which twenty members and visitors partook. At 2 P. M. the regular program started and was much enjoyed by all present.

Election of officers resulted in Dr. Alexander Gray of Savanna being elected president and Dr. Mary Sagner of Thomson secretary for 1923, Dr. McGrath of Savanna, delegate, and Dr. Schreiter, alternate.

Dr. Hopkins, D. D. S., of Sterling, read a very interesting paper on "Gas-Oxygen Anesthesia in Major Operations."

Dr. A. A. Calkins, of Chadwick, gave a splendid paper on "Foreign Bodies in the Urinary Bladder" with history of case in his practice with recent operation. The radiographs were exhibited as well as the hair pin removed. This paper was much discussed.

Dr. E. P. Sloan, President of the Illinois State Society, was present and gave a mighty interesting discourse on Goiter Surgery and showed his operative technique by means of moving pictures. Dr. Sloan's presence was an inspiration to the members of the society and his address and discussions were much appreciated.

Thirteen members and five visitors were present.

G. E. Mershon, Sec.

COOK COUNTY

CHICAGO MEDICAL SOCIETY

Regular Meeting, May 2, 1923

1. Prophylaxis of Tuberculosis—Allen J. Hruby.
2. The Discrepancies Between X-Ray Plates and Physical Findings in Pulmonary Diseases—Charles E. Ide, Milwaukee, Wis.
3. Treatment of Tuberculous Conditions of the Eye—Wm. E. Gamble.

Regular Meeting, May 9, 1923

1. Distraction in Fractures with Two Steinmann Nails—Weller Van Hook.
2. Immunity as Related to Surgery—Emil G. Beck.
   Discussion—Alfred C. Croftan, Charles A. Elliott and E. Wyllys Andrews.

Regular Meeting, May 23, 1923

1. Urgent Surgery of the Stomach and Duodenum.
   General Discussion—Karl Meyer.
2. A Simplified Method for the Diagnosis of Dis-

eases of the Rectum and Anus (Its Application to Treatment)—J. Rawson Pennington.

Discussion—Daniel Orth, Frederick G. Dyas, S. R. Pietrowicz and Gilbert Fitzpatrick.

CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY

(Continued from May Issue)

The patient bad what was a true trophic keratitis, and Dr. Suker believed that the only real trophic keratitis was from a complete mecbanical obstruction of the fiftb nerve and tbe cavernous plexus of the sympatbetic. Loss of sensation in every branch of the fifth nerve would give a pseudotrophic appearance. Wbat the eventual outcome of the case would be, he did not know, but he felt that the return of the circulation and the minute bruit was a distinct sign that the left hemisphere of the brain received its necessary blood supply. Up to tbe present time, no cerebric manifestations followed the ligation of the common carotid artery.

WEAK ATROPIN SOLUTION FOR ASTHENOPIA

Dr. William E. Gamble stated that eye and *headache* resulting from induced spasm of the sphincter iridis and ciliary muscle by the instillation of eserin was a frequent observation in his work, the discomfort usually being relatively slight, but in many cases much pain was produced. Recently one instillation of a 2 per cent solution in the eye of a physician produced so much eye pain that he had to be sent home in a cab and did not recover from the pain until the next morning. Part of the discomfort experienced in passing from a dark room into bright daylight was produced by the rapidly contracting pupils.

While with properly fitting glasses most persons could endure the accommodative spasm of their ciliary muscle in doing close work with but little pain or fatigue, there seemed to be an increasing number of those who could not. He thought that the rational treatment in these cases was to give less work to the tired eyes, to increase the nutrition of the patient and otherwise build up the general health. Unfortunately, many of them could not quit work. Temporary rest might be given by instilling a high dilution of atropin which should not dilate the pupil enough to annoy the patient and should not interfere with close work. He had found 1/200 of a grain of sulphat of atropin to an ounce of water dropped into the eye Saturday afternoons, for those who were doing close work the rest of the week, to give much relief. If used oftener, the results were better.

Dr. Gamble then narrated the history of three illustrative cases. It was not his claim that this treatment was anything but temporary, until change of conditions or general treatment gave relief. He was not sure but that in many cases an even weaker solution might be indicated. In some cases a 1/100 gr. to the ounce solution was necessary to give relief. The strength and frequency of its use varied in different individuals. This particular solution was offered as a guide. Carelessness in filling the prescription should be carefully guarded against.

It would seem that the use of it was indicated more particularly between the ages of 18 and 35 years. In younger persons the stress and strain of life had not yet produced neuroses; in the older, the pupil becomes more sluggish with advancing years and the accommodation less, with the increasing sclerosis of the lens. He was of the opinion that in many hysterical patients, the photophobia was of the trigeminal and not of the retinal type. The mechanical pressure on the nerve endings in and about the sphincter iridis was the source of the discomfort. It was rare, in his experience, to have seen indications for the use of this solution in men; practically all of the patients had been young women. He reported his experience with this drug, with the hope that indications for its use would be more carefully worked out by others than he had been able to do.

DISCUSSION

Dr. Harry Gradle asked Dr. Gamble if be bad measured the influence tbis 1:100,000 solution bad on accommodation, and whether be got the influence upon the spbincter of tbe iris or upon the ciliary muscle, endeavoring in tbat way to differentiate the origin of the pain due to tbe spasm.

Dr. Gamble, in closing, stated that he used 1/200 grain of atropin to the ounce of water as bis weakest solution, and also used 1/100 of a grain as a maximum solution in this work.

He was interested in the question of Dr. Gradle. The second case to wbich he referred did not have an exaggerated contraction of the pupil, but had fatigue; and he thought in tbat case it was probably a hyperesthesia of the ciliary muscle. But in the other two cases, particularly the last one, the thing that struck him first was tbe way tbe pupil came down. It was more like tbe contraction found in a child. The patient complained of photophobia and wore No. 3 smoked glasses without relief. It was impossible for ber to go out in an automobile, but by giving her 1/200 grain of atropin solution that symptom disappeared and she no longer complained. Consequently, he reacbed the conclusion tbat tbe greatest trouble with ber was a spasm of tbe spbincter iridis pressing upon the nerves of the iris. It was interesting to give atropin to relieve tbese cases.

BASAL VISUAL FIELDS IN LESIONS OF OPTIC PATHWAY

Dr. George F. Suker illustrated his talk on the subject with graphic fields (40 odd sets) and the discussion was limited to lesions of the nerve, crus, chiasm, tract, primary centers, optic radiations and cortex. The value of the field was many-fold. By taking the field very accurately many things could be ascertained which were of great assistance in the differential diagnosis, particularly between functional and organic lesions. It was possible to distinguish between cerebral and ocular pathway lesions. In some instances, where the ophthal-

moscopic examination was absolutely negative in every way, the field often gave a clue as to where the lesion was, particularly in amblyopia.

The manner of taking the field was very important and the patients' facial contour must be considered. A narrow face with shallow temples, hollow cheek bones, raised brow and prominent eye would give a larger field, which was normal for that individual, than for one with a sunken eye and high cheek bones and large nose. The size of the test disc was also of value; the larger the disc, the larger the field, and vice versa for the normal individual. The field was always larger from the center toward the periphery than from the periphery toward the center, varying about five degrees in the normal individual.

In taking the color visions it was absolutely essential that the color be definitely seen not reddish, but red; not greenish, but green—in other words, color saturation. As one moved the color discs from the center they would change. Blue would often appear white, and green yellow. In dealing with retinal fatigue it was always desirable not to have the eye exposed too long; encourage frequent winking. The time of day and the light should also be considered. Dr. Suker believed in taking the field with good daylight, preferably north light; and did not consider it wise to take the field with any electric light or with a perimeter with an electric light attachment. The color and form perception of objects in north daylight were entirely different from that with electric light.

The larger the pupil, the larger the field, the longer the antero-posterior diameter of the eye, the smaller the field; therefore, the higher the myopia, the smaller the field. The patient should not be tried too long at one sitting. It was also necessary to consider the vertical palpebral aperture, as it influenced the height and the depth of the field. The field for form and color might vary greatly. It varied little for form in any normal individual, but the color varied greatly.

The visual cortex did not serve in perception of light only, but of color and form. The ability of the patient to recognize "C" or "A" or "B" in any particular part of a field, was essential in determining which part of the visual cortex was involved. This was an idea that needed further investigation and might lead to new facts through taking visual fields.

One chart showed the combined visual field of the two eyes. It was of no diagnostic value and only showed that the combined was larger than the monocular. Behind the chiasm all lesions would present the same kind of a field, whether it was in the optic chiasm, or in the cuneus, or the tract or radiations, with this difference, that the further behind one got and the nearer the cortex, the less observable was the lesion to the patient, unless it became absolutely complete; and the greater was their symmetry.

Dr. Suker exhibited charts of conditions met with in military service, charts showing lesions of the optic tract and of the cuneus—unilateral and bilateral. He was most interested in the lesion of the cuneus for the reason that the various interpretations of sight centered around there. The cuneus had nothing to do with the perception of form. A characteristic of the cuneus lesions was that they were very symmetrical, more so than other lesions. In many of these cases the patients recovered to a large extent, and never recognized their lesions at all, until their attentions was directed to them.

Fields did not give any further information than the location of the lesions. Lesions of the cuneus would not only give visual field defects, but would often have associated with them interferences with speech and possibly hearing. There might be complete blindness in the two eyes and the pupillary action still be present, owing to the fact that the optic nerve fibers were divided into two, one sensory and the other motor for accommodation.

The essential factor in taking a visual field was accuracy. A painstaking field would give the exact location of the lesion, depending upon the portion or portions of each field involved. If the lesions were behind the chiasm and optic nerve there often would be general symptoms associated with them. There could be no bilateral involvement unless the lesion was in the chiasm, the tract, radiations or in the cuneus lobe, unless the lesion was bilateral.

DISCUSSION

Dr. J. F. Burkholder thought there was little to be said in criticism because he presumed the findings has been corrohorated post-mortem. The association of fibers should he remembered. Dr. Suker had mentioned the association of the eyes through the anterior fibers of the chiasm. Another tract had been worked out from the physiologic standpoint, which he mentioned six or seven years ago, the posterior portion of the claustrum. One could get an association between the visual centers of the two occipital lobes, particularly the cuneus, through the posterior fibers of the claustrum, and that gave an association that would account for some of the visual conditions.

The recognition of letters for taking visual fields had escaped him, but it was a good point. Another difficulty which should be made clear was the tracing of the nerve fibers from the retina back to the cuneus. If Parsons was wrong and Fuchs right, there were three series of neurons in the retina. The first series would be the rods and cones; the second would he the hipolar cells, and the third series would he the large ganglion cells, the axons of which passed out of the eyeball, forming the optic nerve, which ran backward to the chiasm where a marked rearrangement of the nerve fibers took place. From the chiasm these same neurons were carried back, forming the optic tracts, the fibers of which were distributed to the pulvinar, the external geniculate, and the anterior pair of the corpora quadragemina, and ended there.

There was no continuity of tissue between the termination of the fibers of the optic nerve in the pulvinar and the parts

that lay behind. A fourth series of neurons lay in the pulvinar and external geniculate and a few in the anterior pair of the quadragemina. The axons of this fourth series of neurons ran backward, forming a large tract or bundle which lay in the white matter of the occipital lobe. This bundle was called the optic radiation, the fibers of which were distributed to the mesial surface of the occipital lobe around the calcarine fissure, and to the angular gyrus of the parietal lobe which arched around the post terminal extremity to the superior temporal sulcus. The letter and word centers lay in the cuneus which lay superior to the calcarine fissure. The center for figures lay in the angular gyrus.

As the essayist had stated, there were two classes of fibers in the optic radiations which carried impulses to and from the cerebral cortex. But he was of the opinion that these had nothing to do with the light reflex for the pupil. The fibers that carried the reflex for the pupil left the optic tract before the visual fibers reached the pulvinar and the genicular and passed downward to the third nucleus, and from this nucleus the fibers were carried to the sphincter pupillae. This formed the true and only pupil reflex arc of the higher vertebraes.

Dr. M. Z. Albro said that two years ago a prominent physician in the city had a hemianopsia in the right field, and in taking his vision he was interested in the fact that he could not recognize letters, but in watching him he found him looking at the chart and making the form of a letter with his finger and then pronouncing the letter. This might give an idea of another road by which he reached the right recognition.

Dr. Michael Goldenburg asked if it was possible to have a unilateral loss of recognition of letters.

Dr. Suker, in closing, said that the primitive function of the eye was the nerve perception of light. All other recognition was developmental and the result of education and was due to the associated fibers around the cuneus, the gyrus and the occipito-parietal lobes. There was no such thing as a unilateral recognition of letters until there was complete blindness in one eye. A unilateral inability to recognize a letter could not exist when both eyes could function because it was a cortical lesion and the cortex had association fibers because of the claustrum joining the two eyes as Dr. Burkholder had said.

Regarding the pupillary reaction fibers and the optic nerve, the median tract of the optic nerve was the motor portion and that went to the anterior corpus quadrigemina, from there to the nucleus of the third nerve, then to the lenticular nucleus and then to the ciliary body and iris. They had no function of sight, just a motor function, and this was true of all the lower animals, whether there was complete decussation or not. The field was larger on the nasal than on the temporal side.

Anatomically the eye was located a little divergent in the socket, bringing the nasal side a little further forward, and therefore a little divergent. It had been demonstrated very well by Shaefer and by Sanger Brown that there was an association between the cuneus, the pulvinar, the geniculate body and the optic thalamus. Otherwise there could not be the field symmetry in the two eyes. Coming back to the chiasm, there could not be any lesion without involving the two eyes. That was the crux of the whole question and the nearer one got to the crux of the chiasm the more likely was there to be the type of lesion which could involve one eye more than the other.

CHICAGO OPHTHALMOLOGICAL SOCIETY

March 20, 1922

Dr. Frank Brawley in the chair.

MELANOMA OF CHOROID

Dr. George F. Suker presented a case which was described by Dr. J. C. Stein.

A school boy, aged 14, entered Cook County Hospital on March 6, 1922, complaining of crossed eyes. About seven years ago the patient recovered from diphtheria, after which it was noted that his left eye was turned in. Some months later he was operated upon for the convergence of the left eye, but later the trabismus recurred. The family history and physical examination were negative. No pigmentary spots were noted anywhere on the surface of the body. Right, vision 0.6; left, 10/200; convergent deviation of the left eye 30°; secondary deviation equal to primary deviation. Conjunctiva, cornea, iris, lens, and vitreous essentially negative, and the pupil reactions were normal.

Fundi: Right eye; the optic disc was normal. Two and one-half disc diameters above it, and slightly temporal was seen a definitely circumscribed area about twice the size of the optic disc. The nasal side of this area was just temporal to an imaginary vertical line touching the temporal side of the optic disc. The patch was rather sharply defined, resembled the human heart in shape and was apparently situated in the choroid. The retina over it was not raised or depressed. The superior temporal vein coursed over this and divided in its inferior temporal quadrant; one branch passing directly temporal, the other superior and temporal. Several small arterial twigs arising from a branch of the superior temporal artery passed over this circumscribed area. No change in the level of these vessels was noted. This sharply circumscribed smooth area appeared of slate (blue ointment) color, somewhat stippled and somewhat thinner in a few places, allowing the choroidal circulatory system to show through. This condition was especially noted in the superior nasal portion of this area, where the margin was rather uneven and feathered.

Left eye. Essentially negative, except for a vertical elliptical disc. Scotoma mapping was unsatisfactory.

Hospital Diagnosis: Melanoma of the choroid (nevus-pigmented mole) of the right eye; left concomitant convergent strabismus with amblyopia ex anopsia.

Pulsating Exophthalmos

Dr. Suker also presented a case described by Dr. Cottle.—This patient entered Cook County Hospital, Feb. 20, 1922, with the history that he had been shot through the left cheek on January 3, 1922, the bullet passing through the cranial cavity. Two attempts had been made in another hospital to remove the bullet. Five days following the injury the left eye began to swell, the lids became edematous, and in the course of the ensuing week he lost all vision and movement. He stated that he could feel "a pumping in his eye" and "a roaring in the left ear." He was unable to open the mouth fully, owing to fracture of the left ascending ramus of the mandible.

THE CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY

The Annual Meeting of the Chicago Laryngological and Otological Society was held on Monday evening, May 8, 1922, at the Hotel Sherman at 8:00 o'clock.

The President, Dr. Robert Sonnenschein, in the chair.

Scientific Program

John P. Minton, Ph. D., and Robert Sonnenschein, M. D., presented papers entitled:

1. "Study of Reinforcement of Sound by Means of the Schaefer Resonators."

2. "Use of Tuning Fork Stem for Both Air and Bone Conduction in Rinne Test."

(Abstract)

Dr. Minton in his paper stated that many cases of deafness might easily be regarded as complete were it not for the establishment of the contrary through the increase in the loudness of the sounds from tuning forks by means of the resonators. Their employment is to be strongly recommended.

After outlining in detail their experimental work with the Schaefer resonators Dr. Minton stated that they had arrived at the following conclusions:

"1. The sound intensity amplification of the (Schaefer) resonators depends on the manner in which they are used. The maximum value of this amplification as observed, firstly, by the examiner is 273; secondly, by the patient, 44, and thirdly, as it appears in unconfined space, 10,700.

"2. The efficiency of the Schaefer apparatus as a resonator decreases rapidly for the higher pitched tones. The same is true at the lower pitched ones except when tested in the open, unconfined space.

"3. The resonators do not increase the total energy given forth by the tuning fork, but permit this energy to be dissipated at a greater rate.

"44. The decrease of the efficiency of the resonator with rising pitch is due to the *unfavorable* phase relation of the air pressure produced by the tuning fork with that caused by the resonator.

"55. Inasmuch as the resonators cause tones to be produced of greatly reinforced intensity, they might be of considerable value from a clinical viewpoint. This is particularly true for the set of four Schaefer resonators since there are given herein the actual magnitudes of the intensity amplification. As noted in previous papers the Schaefer resonators lend themselves well to practical purposes since they cover a comprehensive range, are comparatively cheap, compact and easily manipulated."

Dr. Sonnenschein outlined their work in determining the amount of bone and air conduction by the use of the tuning fork stem and said that the method employed was to excite the fork in the manner chosen by each individual otologist, endeavoring to do this in a definite way in order to get uniform results. They used the small a′ fork (435 d. v.) of Bezold. Holding this at right angles to the body a small pleximeter (such as is employed by neurologists for testing reflexes) was allowed to drop of its own weight from a perpendicular to a horizontal position, striking the flat surface of the prong. The stem was then held against the mastoid process in the usual manner and the duration of hearing by bone conduction noted. The fork was then inserted into one end of a rubber tube, the other end of which was attached to a vulcanized rubber olive-shaped tip (such as is often used with a Politzer bag) and the latter inserted into the meatus auditorius extermus, care being taken that the lumen of the tip was not occluded by contact with a part of the concha or wall of the meatus. The duration of hearing via air conduction was then noted.

The dimensions of the tubing used were: length, 51 om.; width of lumen, 0.7 om.,; thickness of the wall, 1.5 mm. Clinically, this method of doing the Rinne test was carried out on 35 cases. First the test was performed in the usual manner and then repeated by means of the rubber tubing, as described. The findings in the 35 cases are stabulated. Of these cases, six had normal ears, twelve showed either tubal catarrah or acute or chronic otitis media, one was apparently a typical otosclerosis, one was suspicious of a beginning otosclerosis, five showed auditory nerve degeneration and ten apparently had both middle and internal ear changes. As a result of this work the following conclusions were considered justifiable:

"1. Physical experiments show that with the fork stem inserted in the end of a rubber tube the sound waves are transmitted to ear by air column and not by way of the tubing wall.

"2. Clinical findings show that with the fork stem in tubing connected with the ear via hard rubber olive tip, the sound is in many cases heard somewhat longer than with prongs held near the ear. In most cases, however, of middle ear disease, especially those with negative Rinne, the hearing via tube was somewhat less than that with the prongs, whereas if the hearing had been via bone conduction it should have been increased with the tip of the ear.

"3. It therefore seems feasible to determine not only bone conduction as is usually done, but also the air conduction in the Rinne test by means of the stem of the fork."

DISCUSSION

Dr. Edwin McGinnis asked if they had tried stuffing cotton in the middle of the tuhe to see if there was interference with the sound.

Dr. Sonnenschein replied that they had not.

Dr. G. W. Boot asked if they had always used the same length of tube.

Dr. Sonnenschein replied that they had and that it was twenty-six inches long. While it was impossihle to demonstrate their point ahsolutely, it was a fact that the sound waves passed along the lumen of the tuhe, very little going through the wall and very little heing transported by the tuhe wall itself.

Dr. E. L. Kenyon asked why they could not use a soft insert in the middle ear instead of the hard ruhber tube, perhaps just the tuhe itself.

Dr. Sonnenschein said they had tried that hut it was hard to hold it in place. The tip heing pointed held it nicely in the ear without striking any of the outside portion of the ear. It was just the size ordinarily used with the Politzer hag.

Dr. J. Holinger said that there has always heen contro-

versy where he could not see any reason for it. In the Rinne test we know that the handle of the tuning fork vibrates as long as the prongs do. It is therefore immaterial whether we observe the handle or the prongs since it is only a question of time. It was the aim of Bezold to make all the tests as simple as possible. The question of human equation enters into the tests and the less and simpler apparatus are used the more reliable and the more uniform the results will be. Also, the less the excitement of the patient the better the result will be. It is true, some points are theoretically not explained. In regard to this Bezold uses the comparison of hearing the heart sounds by means of the stethescope. It is not known accurately how and where the heart sounds are produced, but it is known that if there are certain changes from the normal sounds, we find at the post-morten certain characteristic changes of the valves of the heart (stenosis, etc.). Nobody would go so far as to advise throwing the whole auscultation of the heart overboard because we do not know how the sounds of the heart are produced or how the abnormal sounds can be explained. In his opinion, the only way to attack the question is to say that if there is a negative Rinne in a given case and a middle ear affection is not found at the postmortem, then there is room for an argument. Observe the facts accurately, immaterial of the explanation. Many an explanation was not found because the facts were not observed accurately.

The work of Dr. Sonnenschein was important, and showed that he is thinking. Dr. Holinger believes in simplifying, not complicating these difficult matters.

Dr. G. E. Shambaugh believed that the work with resonators will bring out some very interesting facts. The method in vogue of testing different parts of the tone scale by such means as tuning forks brought out a good many incidences where gaps in the tone scale existed, that is, where patients were not able to hear the tones over a certain area. By intensifying these tones with resonators many of these apparent gaps in the tone scale disappeared. It seems likely that with enough amplification there might be found to exist no real tone gaps, that is, areas where one cannot hear a tone, provided the entire function of the labyrinth has been destroyed. It is a practical point of great importance in the education of a child with defective hearing, that is, training the child to speak to ascertain whether there is any remnant of hearing. By use of resonators this may be determined more readily. Even a very small remnant of hearing is often of great assistance in training a child to speak.

The study of the Rinne test is very interesting. Dr. Shambaugh believed that the Rinne test taken by itself gives more definite information than does any other single test in determining whether the cause for the defect is from obstruction in sound conduction or a defect in the sound perceiving apparatus. The Rinne test is perhaps more valuable than all the other tests put together in determining this point. In making use of this test one has to take into consideration whether one or both ears are involved. A patient with a one-sided defect, that is at all marked, is bound to have a Rinne negative, no difference whether this defect is due to obstruction in sound conduction, fixation of the stapes, or whether this defect is due to degeneration in the nervous mechanism.

There seems to be an impression that bone conduction can be determined separately for the two ears. As a rule it will be found that the bone conduction is approximately the same when the fork is placed over the mastoid process in an ear where we are clinically satisfied that there has been a total destruction of function as when the fork is placed over the mastoid of the opposite normal ear. It is the exceptional case where under circumstances of this sort one is able to detect a slight difference in the duration of bone conduction of the two sides.

Dr. John P. Minton (closing), answering Dr. Boot's question, said that the length of time the sound can be heard with the resonator is less than without it. The degress of bone conduction in old age had nothing to do with resonance, but the change was probably due to partial degeneration of the internal ear mechanism and not at all to other changes that go on.

Dr. Robert Sonnenschein (closing) stated that he had the pleasure, in 1909, of becoming acquainted with Dr. Schaefer and became interested in his resonators. As he had said in 1912, when he read a previous paper on this subject, the great advantage of the resonators lies in several facts. They were first made use of for experimental purposes by the great Helmholtz. As the resonators were spherical and tested the whole range of sounds from 100 to 1,000 vibrations, it was necessary to have a great many of them and it consumed much time in shifting from one sphere to the other, besides being very expensive. Koenig in Paris also devised a set and Edelmann had a set, but they all have a great many parts. Professor Schaefer constructed a very simple set consisting of four resonators and in these he has the range of from 100 double vibrations to 1,000 double vibrations. Dr. Sonnenschein had received a letter from Professor Schaefer two days previously in reply to one of his asking if there was any work that he knew of along the line he and Dr. Minton were carrying out, and Professor Schaefer said he knew of no such work. They admitted that there might be errors. They had checked up the world and would be glad to know if others would do so and tell them their results. It was interesting to test the work out and find out whether it was worth anything from a practical standpoint.

It was very interesting to know the intensity amplification as it appears in a closed room and as it occurs out of doors. In the open the higher fork, namely, small c^3, seemed to be amplified only five times. If they struck a high pitched fork it could be heard at a distance of five meters indoors, while out of doors one can hear the low tone a great distance.

One thing that was hard to explain was the fact that the lower tone and the higher tone were the least amplified, and the middle the most, as shown by Schaefer long ago. The fact that out in the open air the intensity of the amplification is so tremendous, whereas in the room to the examiner and the patient the amplification for the low tones is so small was very interesting.

What Dr. Holinger said about the practicality of the test as devised by Bezold was absolutely correct. Bezold's work was wonderful and they were not attempting to change any test, but felt that it would be interesting to find out if the fork could be used in a different way, especially since some European workers had condemned the Rinne test so strongly.

Dr. Sonnenschein agreed with Dr. Shambaugh regarding the value of the Rinne test and approved the simplicity of the tests, but this work was for the purpose of satisfying themselves. If anyone would check them up and disprove their results they would be glad to know the truth.

Dr. Shambaugh had called attention to the fact that it might be possible to test patients with the resonators who apparently did not hear the forks at those pitches. That might not prove whether there were gaps, for it is necessary in some cases to increase the tone intensity 100 million times before the patient can appreciate it. In cases where there was impairmnt and not total loss of hearing of tone it might be of assistance.

Dr. George F. Shambaugh presented a series of lantern slides illustrating the distribution of blood vessels in the internal ear and discussed the subject of the circulation of the labyrinth.

MACOUPIN COUNTY

The Macoupin County Medical Society met in the New Commercial Club Rooms, Virden, Illinois, March 27, 1923, and was called to order by Vice-President E. E. Bullard of Girard.

Seventeen members and visitors were present.

Dr. C. Ellsworth Black of Jacksonville gave a very interesting address on "Metabolism," clinically illustrated by living subjects.

Dr. Carl E. Black of Jacksonville gave a very

interesting address on "Shock," illustrated with lantern slides.

Drs. Black & Black were given a rising vote of thanks for their excellent papers and illustrations.

The Censors reported Staunton as the place for the next meeting of the Society and the following officers were elected for the coming year: President, Dr. E. E. Bullard, Girard; vice-president, Dr. G. A. Floreth, Mt. Olive; secretary-treasurer, Dr. T. D. Doan, Scottville; medico-legal member, Dr. T. W. Morgan, Virden; delegate, Dr. T. D. Doan, Scottville; alternate delegate, Dr. J. R. Higgins, Gillespie.

MADISON COUNTY

May Meeting

The Madison County Medical Society met in regular session at the Wildey Theatre with President Hugo C. H. Schroeder in the Chair.

Dr. W. W. Billings, of Troy, Illinois, was accepted to membership by transfer card from Greene County.

The report of Miss Heighway, Community Nurse, was filed with the Secretary.

The Secretary called attention to the members present that Senate Bill No. 251 relative to an amendment grouping Counties into Districts for joint Sanitoriums, and Senate Bill 95 providing for graded health instructions in the curriculum of our schools were now pending before the House, and that the Officers of the Illinois Tuberculosis Association were asking co-operation through the profession in favor of the passage of these bills, and asking that individual members write their representatives and senators concerning same. After some discussion it was moved by Dr. Pfeiffenberger, seconded by Dr. Robertson that the Society endorse the bills referred to and that the Secretary communicate this information to the officers of the Illinois Tuberculosis Association and that each member write his representatives asking their support.

President Schroeder called attention to the Society of the Educational Program that is now being introduced by the Illinois Medical Society in the form of newspaper publicity in and throughout the State of Illinois, in the interest of the Medical Profession and that said program called for the expenditure of considerable money and the members of the profession were asked to contribute voluntarily to this fund. Dr. Wahl moved that the Madison County Medical Society contribute $50.00 out of their general treasury towards this fund, seconded by Dr. Hirsch, carried.

On motion of Dr. Pfeiffenberger, seconded by Dr. Gillis, the Secretary was instructed to draft a letter in the form of an appeal to be sent to every doctor in Madison County asking him to contribute individually to this fund, motion carried.

The matter of arranging for a Tuberculosis Clinic to be held during the summer months was discussed and upon motion of Dr. Pfeiffenberger seconded by Dr. Gillis the Chair was authorized to appoint a Committee with Miss Heighway as member to make necessary arrangements. The Chair appointed on this Committee, Dr. Barnsback, Dr. Kaeser and Miss Heighway and Secretary.

Dr. John R. Lionberger of Parke-Davis and Company then presented his lecture "Vitamines," illustrated with lantern slides, which was very interesting and highly instructive and brought forth a general discussion.

Upon motion of Dr. Pfeiffenberger a rising vote of thanks was tendered the speaker for his lecture.

On motion adjourned.

Personals

Dr. Cassius C. Rogers discussed the treatment of cranial and intracranial lesions, before the Lee County Medical Society, April 10, at Dixon.

Dr. George W. Hoover, for the past nine years chief of the Chicago district of the U. S. Department of Agriculture, has been appointed chemist in charge of the drug control of the United States, it was announced, April 20.

Dr. H. B. Carriell, who was relieved as managing officer of the Dixon state colony, January 1, has been reinstated in the service of the state charities with rank of senior physician and has been ordered to report to Kankakee Hospital by the governor.

Dr. R. J. Burns has been appointed health commissioner of Freeport.

Dr. J. M. Beveridge of Oregon was elected a director of the sanitorium board of the Ogle County Tuberculosis Society, recently.

At the recent meeting of the American Drug Manufacturers' Association held in New York, April 16 to 19. Dr. Alfred S. Burdick was elected president for the coming year. Doctor Burdick is well known to the readers of THE ILLINOIS MEDICAL JOURNAL. Our congratulations are extended to Doctor Burdick on this merited recognition and to the American Drug Manufacturers' Association on the wisdom of its choice.

Dr. Burdick is the author of the Standard Medical Manual, The Remedy, Common Emergencies, and other books. During the war he was a member of a Chicago draft board and has been active in trade association work as a director of the American Pharmaceutical Manufacturers' Association, a governor of the Synthetic Organic Chemical Manufacturers' Association and a member of the executive committee of the American Drug Manufacturers' Association. He was recently elected vice-president and chairman of the

fine organic section of the synthetic organization.

At the meeting referred to, important matters relating to narcotic-drugs' regulation, legislation, pharmaceutical progress, scientific research, medical chemicals, and other relevant topics were discussed. In the matter of narcotic-drugs' regulation, especially, constructive recommendations were made which, it is hoped sincerely, will aid in bringing the chaos now prevailing to a greatly needed close and establish equitable and just regulations.

News Notes

—The Western Electro-Therapeutic Association at its meeting in Kansas City, April 19-20, elected the following officers: President, H. H. Bowig, Rochester, Minn.; first vice-president, E. H. Skinner, Kansas City; second vice-president, A. D. Willmoth, Louisville, Ky.; treasurer, W. P. Grimes, Kansas City; registrar, B. C. Harris, Sapulpa, Okla.; trustees, T. Howard Plank, Chicago, and B. B. Grover, Colorado Springs.

—The Elgin Physicians Club at the annual meeting, May 9, elected Dr. Sally Howell, president; Dr. F. T. Eichler, vice-president, and Dr. Olive H. Kocher, secretary. R. T. Lamb, an Elgin broker, gave an address on "The Science of Investment." Dr. Frank Wieland of Chicago gave a lecture on "Studies in Sterility."

—The Illinois Society for Crippled Children, fostered by the Rotary Club, was organized in Bloomington April 12.

—It is reported that Federal Judge English fined Dr. Ezra Hart, Harrisburg, $500 when he pleaded guilty, April 14, to the second offense of violating the Harrison Narcotic Law.

—The Metropolitan Life Insurance Company has renewed its grant of $3,000 to the department of hygiene and bacteriology of the University of Chicago, for special investigations in respiratory diseases.

—It is reported that Dr. I. Clark Gary, proprietor of the Peoples' Hospital and Training School for Nurses, Chicago, was convicted in the federal court, April 23, on a charge of selling narcotics to drug addicts who were patients in the hospital. He was fined $2,200.

—At the annual meeting of the Central Illinois Medical Society in Pana, Dr. Dorwin D. Barr, Taylorville, was elected president; Dr. Thomas O. Freeman, Mattoon, vice-president, and Dr. Franklin A. Martin, Pana, secretary-treasurer.

—The association of interns of St. Luke's Hospital will tender a banquet to former interns of the hospital, June 4, at the Hotel Morrison. It is requested that all former interns communicate with Dr. Dean Burns at the hospital.

—The average number of cases of measles in Chicago increased from thirty-three a day in January, to 144 a day during the first ten days of May. The council finance committee, May 10, voted $2,000 for extra quarantine officers to fight the epidemic. The city health commissioner stated that since January 1, 10,836 cases had been reported in Chicago.

—At the annual meeting and banquet of the Chicago Laryngological and Otological Society, May 3, the following officers were elected for the ensuing year: President, Dr. John A. Cavanaugh; vice-president, Dr. Austin A. Hayden, and secretary-treasurer, Dr. Edwin McGinnis; the president, Dr. Charles H. Long, spoke on "Chicago's Past Masters in Oto-Laryngology."

—Dr. Omar M. Willis of Metropolis, who was indicted for violation of the Harrison Narcotic Law, was sentenced recently, it is reported, to serve three years in Leavenworth, and to pay a fine of $500. Dr. Willis was indicted along with four others from the same city. Evidence was introduced to show, it is reported, that he had dispensed 13,000 grains of morphin within the last fourteen months.

—The name of the Hahnemann Hospital of Chicago has been changed by the board of trustees to "The Chicago Memorial Hospital." The board states that the practice and work of the hospital now conforms in all respects to that of other approved hospitals of Chicago.

—Twelve social service agencies officially began work in a new home in the Keehn building at 308 North Michigan avenue, May 1. Two of the agencies were already located in this building. Among the organizations which have their administrative offices at this location are: The Chicago Association for the Prevention and Relief of Heart Disease; the Illinois Society for Mental Hygiene; Illinois Society for the Prevention of Blindness, and the Infant Welfare Society.

—Mrs. Theodore B. Sachs, widow of the late Dr. Sachs, has succeeded James Minnick as superintendent of the Chicago Tuberculosis Insti-

tute. The staff comprises a physician, a crusade director, a publicity director, a placement bureau director, a supervisor of nurses, two assistant supervisors, eighteen public health nurses, and a custodian of property. The institute has recently arranged to furnish tooth brushes and powder for children at cost. These are dispensed by public health nurses employed throughout Cook county by the institute. To raise money for a cottage for tuberculous nurses, photographs of the London monument to Edith Cavell are being sold.

—At a banquet of the Chicago Section of the American Chemical Society, May 25, the Willard Gibbs Medal was presented to Julius Stieglitz, Ph.D., in recognition of his research work on molecular rearrangement and his interpretation of univalent nitrogen. The medal was presented by its founder, Mr. W. A. Converse. Professor Stieglitz is chairman of the department of chemistry, University of Chicago; chairman of the Committee on Synthetic Drugs of the National Research Council, and has been a member of the Council on Pharmacy and Chemistry of the American Medical Association since its inception.

—Dr. Lena K. Sadler, 533 Diversey Parkway, was hostess recently to a new medical society, The Chicago Council of Medical Women, incorporated May 8. The incorporators are: Dr. Anna E. Blount, Dr. Alice Conklin, Dr. Effa V. Davis, Dr. Mary E. Hanks, Dr. Lena K. Sadler. The purpose of the Council is to collate valuable clinical experience and to promote fellowship. Membership is limited to women holding a license to practice medicine and to seventy-five active members. The management is represented by Anna E. Blount, president; Mary E. Hanks, first vice-president; Annie W. Sage, second vice-president; Lena K. Sadler, secretary; Eliza R. Morse, treasurer; Alice Conklin, Effa V. Davis, and Helga Ruud, directors; Sarah M. Hobson, editor. Eighteen charter members are enrolled.

Deaths

Thomas Grant Allen, Chicago; Northwestern University Medical School, Chicago, 1898; member of the Chicago Pediatric Society and the Central States Pediatric Society; formerly professor of children's diseases at the Post-Graduate Medical School; served in the M. C., U. S. Army, during the World War; on the staff of U. S. Veterans' Hospital No. 30; aged 59; died, May 10, of pneumonia.

Edward Pinchon Bartlett, Springfield, Ill.; St. Louis Medical College, St. Louis, 1870; Bellevue Hospital Medical College, New York, 1875; state commander of the Grand Army of the Republic; aged 81; died, May 10, of cardiac asthma, at a local hospital.

Franklin Pierce Bivins, Shelbyville, Ill.; Miami Medical College, Cincinnati, 1881; aged 69; died, April 22, following a long illness.

Elizabeth Neil Brady, Oak Park, Ill.; Northwestern University Woman's Medical School, Chicago, 1900; aged 53; died, May 18, of heart disease.

James S. Collins, Carlinville, Ill.; Rush Medical College, Chicago, 1880; in active practice till recent years; formerly president of Macoupin County Medical Society; aged 68; died, May 8.

Howard Charles Emons, Chicago; Chicago College of Medicine and Surgery, 1917; a Fellow A. M. A.; served in the M. C., U. S. Army, during the World War; on the staff of the U. S. Marine Hospital No. 5, where he died, May 2, of pneumonia; aged 32

Life Harrison, Peoria, Ill.; Chicago College of Medicine and Surgery, 1911; member of the Illinois State Medical Society; aged 57; died, May 6, in Delmar, Iowa.

Timothy Hartigan, Chicago; College of Physicians and Surgeons, Chicago, 1896; aged 62; was found dead in bed, April 23, of organic heart disease and chronic nephritis.

William Robert MacKenzie, Chester, Ill.; University of Michigan Medical School, Ann Arbor, 1870; member of State Board of Health 1883-1893; a Fellow, A. M. A.; aged 79; died, April 24.

Clinton Edward Powell, Polo, Ill.; Marion-Sims College of Medicine, St. Louis, 1897; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 49; died, April 17, of chronic nephritis.

Maurice J. Quille, Jr., Chicago; American College of Medicine and Surgery, Chicago, 1905; a Fellow A. M. A.; aged 37; died, April 29, of septicemia.

Leonard A. Robison, Canton, Ill.; Cincinnati College of Medicine and Surgery, Cincinnati, 1888; aged 70; died suddenly, May 3, of erysipelas.

Lot Snoddy, Chicago; Jefferson Medical College of Philadelphia, 1880; member of the Illinois State Medical Society; aged 65; died suddenly, April 24, of heart disease.

Mark Spicker, Chicago; Medical Department of the University of the City of New York, 1872; aged 72; died, May 10, of uremia.

John George A. Stahl, Chicago; Rush Medical College, Chicago, 1895; aged 59; died, May 10, of cerebral hemorrhage.

Lewis Llewellyn Wickersham, Malden, Ill.; Rush Medical College, Chicago, 1882; also a druggist; aged 63; died, April 23, at the Perry Memorial Hospital, Princeton, of an overdose of veronal, presumably self-administered.

Annie M. Young, Chicago; Hahnemann Medical College and Hospital, Chicago, 1889; aged 65; died, April 13.

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CONTENTS

Editorials (For Titles See Extended Table of Contents). 1-18

ORIGINALS

Multiplex Pathology and the Cancer Problem. *William Seaman Bainbridge, M. D., New York City* 20

How Can a State Medical Journal Best Serve its Readers? *Chas. J. Whalen, M. D., Chicago* 24

Ectopic Pregnancy. *Andy Hall, M. D., Mt. Vernon, Ill.*. 33

How to Meet Obstetrical Emergencies. *George Gellhorn, M. D., St. Louis, Mo* 37

Cesarean Section Under Local Anesthesia. *Edmund C. Roos, M. D., Decatur, Ill.* 42

ORIGINALS

Experiences with Non-Surgical Drainage of the Gall Bladder. *Jacob Meyer, M. D., Chicago* 47

Report of a Case of Syphilis of Lungs, with Review of Reported Cases. *A. Egdahl, M. D., Rockford, Ill.* 50

Complement and Syphilis with Special Reference to the Biologic Action of Arsphenamine and Mercury. *Ferdinand Herb, M. D., Chicago* 54

Benign Neoplasms of the Larynx. *John A. Cavanaugh, M. D., Chicago* 59

The X-Ray Treatment of Thyrotoxicosis. *J. S. Trostler, M. D., Chicago* 64

Continued on page 14

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CONTENTS

Editorials (For Titles See Extended Table of Contents) . 85-106

ORIGINALS

Ectopic Gestation with Report of Cases. *Thomas W. Nuzum, M. D., Janesville, Wis.* 107

Cancer. *William M. Harsha, M. D., Chicago* 109

Choriocarcinoma Following Extrauterine Pregnancy. *John Beverly Moore, M. D., Benton, Ill.* 114

The Edematous Cardiopath. *Joseph M. Patton, M. D., Chicago* 117

Surgery of the Upper Abdomen Under Local Anesthesia. *Robert Emmett Farr, M. D., Minneapolis, Minn.* 120

The Treatment of Chronic Fatigue Intoxication. *Edward H. Ochsner, M. D., Chicago* 125

Pernicious Anemia. *R. D. Robinson, M. D., Chicago* 129

Anatomy, Physiology and Diseases of the Circulatory System and Management and Treatment of Such Diseases. *H. C. Houser, M. D., Westfield, Ill.* 133

Diabetes Mellitus. *Richard F. Herndon, M. D., Springfield, Ill* 137

Industrial Eye Injuries. *Frank Allport, M. D., Chicago,* . 145

Thoughts on Medical Organization. *A. F. Kaeser, M. D., Highland, Ill.* 149

The Etiology and Management of Neurasthenic Conditions. *Frank R. Fry, M. D., St. Louis, Mo.* 151

Some Thoughts on Preventive Surgery with Special Reference to Focal Infection. *George H. Parmenter, M. D., Beecher City, Ill.* 156

Continued on page 14

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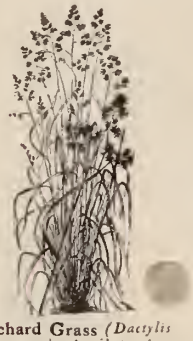
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CONTENTS

Editorials (For Titles See Extended Table of Contents) . 169-193

ORIGINALS

Some Relations of the Nose to the Eye and Ear. *B. F. Andrews, M. D., Chicago* 195

The Surgical Reconstruction of the Paralytic Upper Extremity, *Arthur Steindler. M. D., Iowa City, Iowa* ... 197

Report of Two Cases of Placenta Previa in which Cesarean Section was Done. *J. A. Fisher, M. D., Metropolis, Ill.* 199

The Ductless Glands in Relation to Certain Dermatoses. *M. L. Ravitch, M. D., Chicago* 201

Treatment and Results in Fractures. *John M. Dodd, M. D., Ashland, Wis.* 203

The Effect of X-Rays and Radium Rays in Malignancy. *Harold Swanberg, M. D., Quincy, Ill.* 205

Symptoms and Treatment of Deviations of the Nasal Septum. *Edward E. Edmondson, M.D., Mt. Vernon, Ill.* 208

Neoplasms of the Larynx. *Charles M. Robertson, M. D., Chicago* 210

The Injection Treatment of Hemorrhoids. *William A. Hinckle, M. D., Peoria, Ill* 217

Glaucoma Surgery. *Michael Goldenburg, M. D., Chicago.* 219

Splitting the Cord in Indirect Inguinal Hernia. *C. B. Ripley, M. D., Galesburg, Ill.* 223

Diet During Pregnancy. *Eugene Cary, M. D., Chicago..* 228

Continued on page 14

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CONTENTS

Editorials (For Titles See Extended Table of Contents) . 253

ORIGINALS

The Major Infections. *William J. Mayo, M. D., Rochester, Minn* 283

A New Operation for Femoral Hernia. *Edmund Andrews, M D., Chicago* 290

The Lipoids. *H. Iscovesco, M. D., Paris, France* 292

Early Diagnosis of Chronic Heart Conditions. *J. A. E. Eyster, M. D., Madison, Wis.* 297

The Intracranial Complications of Suppurative Sphenoid Sinus Disease. *C. F. Yerger, M. D., Chicago* 304

Perforative Appendicitis. *O. L. Pelton, Jr., M. D., Elgin.* 308

Atypical Exophthalmic Goiter. *Israel Bram, M. D., Philadelphia, Pa.* 311

Interpretation and Diagnosis of Gross Lesions Within the Lungs. *Robert H. Hayes, M. D., Chicago* 314

Where the Field of the Oculist Meets That of the Practitioner. *B. Y. Avis, M. D., St. Louis, Mo.* 319

Salient Points in the Diagnosis and Treatment of Cancer of the Uterus. *Arthur H. Curtis, M. D., Chicago* 323

Continued on page 14

ANNUAL MEETING, ILLINOIS STATE MEDICAL SOCIETY, AT DECATUR, MAY 15-17, 1923

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CONTENTS

Editorials (For Titles See Extended Table of Contents).. 333

ORIGINALS

Chronic Indigestion in Childhood. *John Lovett Morse, M. D., Boston, Mass*.... 364
Syphilitic Stricture of the Rectum. *Worren R. Roiney, M. D., St. Louis, Mo*.... 370
Cystoscopy and the General Practitioner. *F. F. Hess, M. D., Chicago*.... 372
The Case of the Family Doctor. *E. O. Laughlin, M. D., Poris, Ill*.... 375
Malignancy Infection vs. Heredity. *Helen B. Flynn, M. D., Chicago*.... 376
Urologic Problems and Diagnosis. *R. P. Kile, M. D., Rockford, Ill*.... 378
The First Daily Hospital Clinic in America for Private Patients. *Emmet Keoting, M. D., Chicago*.... 382
Follicular Eye Affections in Children. *James W. Dunn, M. D., Cairo, Ill*.... 384
Notes on the Care of the Skin. *Arthur Wm. Stillions, M. D., Chicago*.... 388
The Carbondale Anti-Malaria Campaign. *Anselmo F. Dappert, Springfield, Ill*.... 393
Mesenteric Thrombosis—Report of a Case With Recovery. *C. M. Johnson, M. D., Harvard, Ill*.... 400
Intestinal Stasis. *Edgor E. Poos, M. D., Belleville, Ill*.. 402

Continued on page 14

ANNUAL MEETING, ILLINOIS STATE MEDICAL SOCIETY, AT DECATUR, MAY 15-17, 1923

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CONTENTS

Editorials (For Titles See Extended Table of Contents).. 409

ORIGINALS

President's Address. *E. P. Sloan, M. D., Bloomington.* 421

Address of Acceptance. *Edward H. Ochsner, M. D., Chicago* 423

Surgical Judgment. *John H. Gibbon, M. D., Philadelphia, Pa.* 424

Certain Factors to Be Considered in Judging the Effects of Prohibition in Relation to the Use of Narcotics. *Lester D. Volk, M. D., Brooklyn, N. Y.* 428

Smallpox, Its Differential Diagnosis. *Archibald L. Hoyne, M. D., Chicago* 433

Tuberculosis in Bones and Joints. *William A. Kimmel, M. D., Oak Forest, Ill.* 436

Nephrolithiasis Complicating Pregnancy. *Aime Paul Heineck, M. D., Chicago* 442

Specific Hypersensitiveness as a Common Cause of Illness. *W. W. Duke, M. D., Kansas City, Mo.* 445

Notes on the Treatment of Compound Fractures of the Extremities. *William H. Byford, M. D., Chicago* 452

Gunshot Injury Involving the Ulnar Nerve. *Arrie Bamberger, M. D., Chicago* 453

Acute Appendicitis in Children. *Thomas H. Kelley, M. D, Chicago* 454

The Modern Conception of Acidosis. *Julius S. Weingart, M. D., Des Moines, Iowa* 459

Continued on page 14

Entered as Second-Class Matter July 21, 1919, at the Post Office, Oak Park, Illinois, under the Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 8, 1917, authorized July 15, 1918.

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